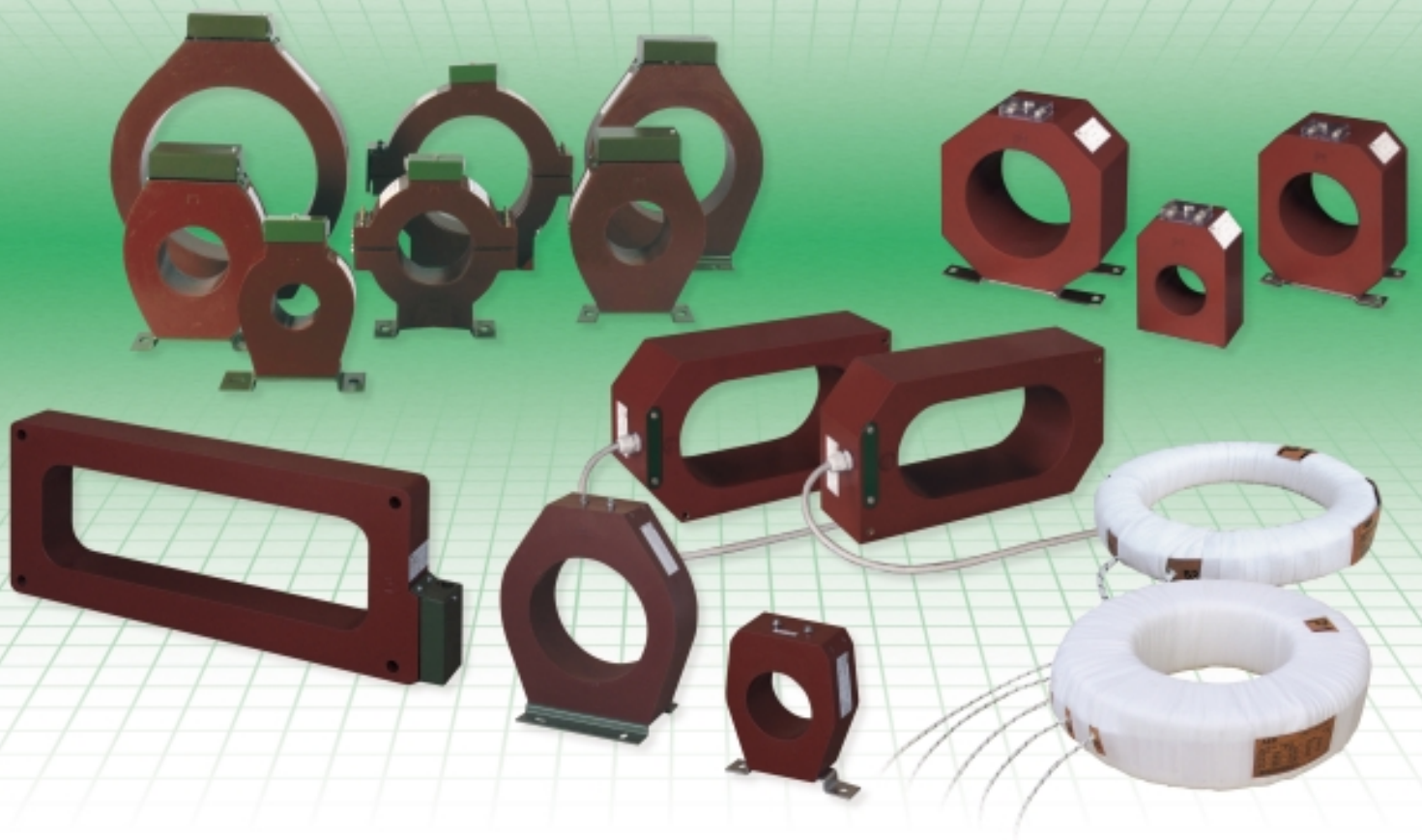


CABLE CURRENT TRANSFORMERS

types: KOLMA, KOLA, KOKM, KOKU, KOLT

Catalogue



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Cable Current Transformers, indoor types: KOLMA, KOLA



Description

Transformers, KOLMA_ and KOLA_ are suitable for the measurement of the sum of three-phase currents in a 3-phase cable. Under normal operating conditions this sum is zero. In the event of an earth-fault the sum of the currents is equal to the earth-fault current and a corresponding current flows in the secondary.

These transformers are used together with static earth-fault relays. The cable current transformers can generally be used when measuring the residual current e.g. to prewarn of, or locate an earth-fault. An uninsulated busbar or low voltage cable serves as the primary conductor.

How to select the correct residual current transformers

The transformer for an earth-fault relay is selected according to dimension of the window, and construction of the transformer.

For types KOLMA 06 A1, and KOLMA 06 D1, the number of turns used in the secondary winding is selected according to the relay setting value, and the earth-fault current or the required current ratio.

In addition correct functioning of the earthfault protection relays for KOLMA 06 A1 and KOLMA 06 D1 is easy to test by means of the test winding (terminals P1x - P2x) of the transformer. The test winding is rated for 6 A max. continuous current.

Table 1 Selection of residual current transformers

Type	Window diam. mm	Construction	Weight kg
KOLMA 06 A1	90	Ring core, multi-tap secondary	7.0
KOLMA 06 A2	58	Ring core	2.9
KOLMA 06 B2	100	Ring core	5.4
KOLMA 06 D1	180	Ring core, multi-tap secondary	11.5
KOLMA 06 D2	180	Ring core	11.4
KOLA 06 B2	100	Split ring core	6.0
KOLA 06 D2	180	Split ring core	11.0

Technical data

The primary winding of indoor type cable current transformers is either a cable or a busbar, which is insulated for the application voltage.

The secondary winding and ring shaped iron core is cast in resin which has good electrical and mechanical properties.

Rated voltage	0.72 kV ⁽¹⁾
Insulation test voltage 50 Hz 1 min	3 kV (IEC 60044-1)
Frequency	50 Hz (60 Hz)
Rated thermal current	$1.2 \times I_{pn}$
Short-time withstand current I_{th} 1 s Peak withstand current I_{dyn}	$60 \times I_{pn}^{(2)}$ $2.5 \times I_{th}$
Secondary terminals Operating temperature range	For 6 mm ² conductor -5...+40 °C

⁽¹⁾ The insulation level of the primary conductor determines the maximum operating voltage.

⁽²⁾ KOLA 06 B2 is type tested for 10 kA 3 s.

Installation

The KOLMA-types must be installed before the cables and cable terminations are connected.

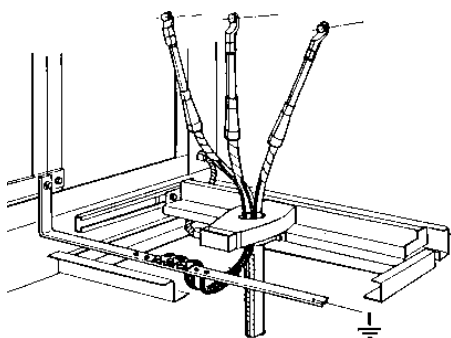
With the KOLA 06 B2 and KOLA 06 D2 -types, the ring core can be opened and thus the transformer can be installed even though the cable is already connected. The two halves of the ring core are tightened together with four screws which also guide the halves to the correct position. The secondary winding is distributed over both halves of the core. The two sections of the winding are connected together with two connecting pieces.

Cable current transformers are fastened either by means of the fixing base or by the nuts cast into the transformer frame. When installing the transformer, the effect of the current in the metal armour or in the protective conductor must be eliminated. In case the metal armour or the protective conductor is drawn through the transformer, the earthing conductor must be drawn back through the transformer for earthing. The earthing conductor between the cable termination box and the transformer, must not be connected to conductive structures, and the metal cable termination box must be insulated from the supporting structures.

On a multi-ratio transformer the unconnected secondary winding terminals and test winding must not be short circuited.

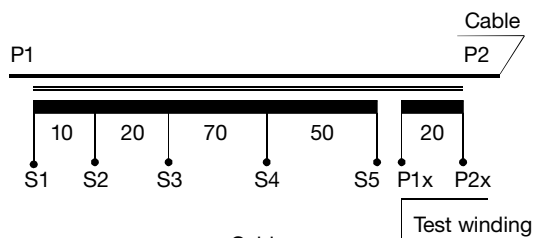


Cable current transformers, types KOLMA_



Number of turns and terminal markings

KOLMA 06 A1
KOLMA 06 D1



KOLMA 06 A2
KOLMA 06 B2
KOLMA 06 D2
KOLA 06 B2
KOLA 06 D2



Table 2. Current ratios and rated burdens for accuracy class 10 P 10

Design data

Types KOLMA 06 A1 and KOLMA 06 D1

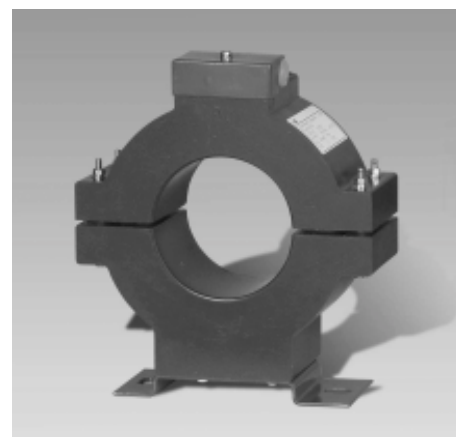
Current ratio A	Secondary terminals	Burden / VA Type	
		KOLMA 06 A1	KOLMA 06 D1
50/1	S4 - S5	1.0	0.5
70/1	S3 - S4	2.0	1.0
100/1	S1 - S4	2.5	2.0
150/1	S1 - S5	5.0	4.0
50/5	S1 - S2	1.0	0.5
100/5	S2 - S3	2.5	1.5
150/5	S1 - S3	4.0	3.0
250/5	S4 - S5	7.5	5.0
350/5	S3 - S4	10.0	7.5
500/5	S1 - S4	15	10
600/5	S3 - S5	20	15
750/5	S1 - S5	20	15

Table 3. Current ratios and rated burdens for accuracy class 10 P 10

Design data

Types KOLMA 06 A2, KOLMA 06 B2, KOLMA 06 D2 and KOLA 06 B2

Type	Current ratio A	Secondary terminals	Burden VA
KOLMA 06 A2	100/1	S1 - S2	2.0
KOLMA 06 B2	100/1	S1 - S2	2.5
KOLMA 06 D2	100/1	S1 - S2	2.0
KOLA 06 B2	100/1	S1 - S2	2.0
KOLA 06 D2	100/1	S1 - S2	2.0



Openable residual current transformers, type KOLA 06 B2 complete with fixing base KOLMA-ZK 1 and terminal cover KOK-ZAX 14.

Ordering data for accessories

- quantity
- type

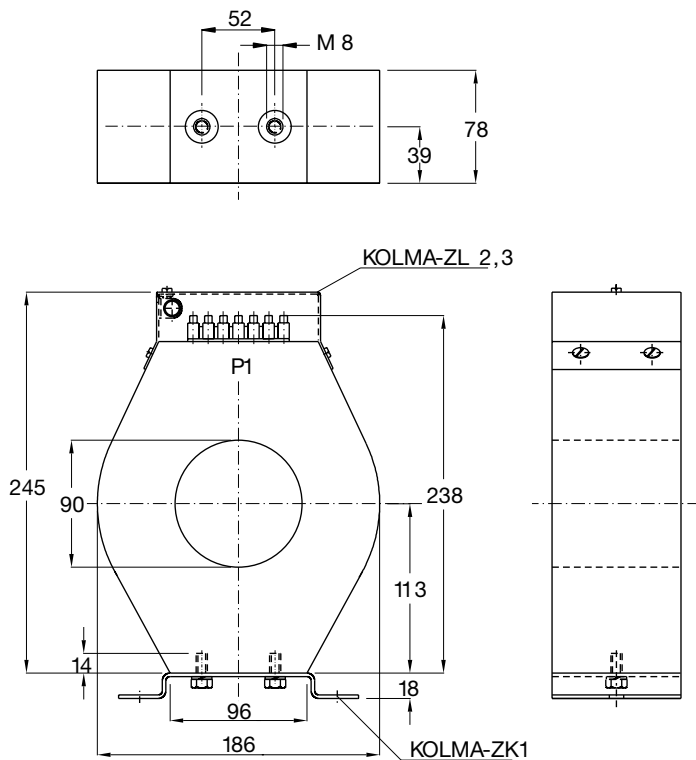
Accessories shall be ordered separately.

Table 4. Selection of accessories for KOLMA_ and KOLA_

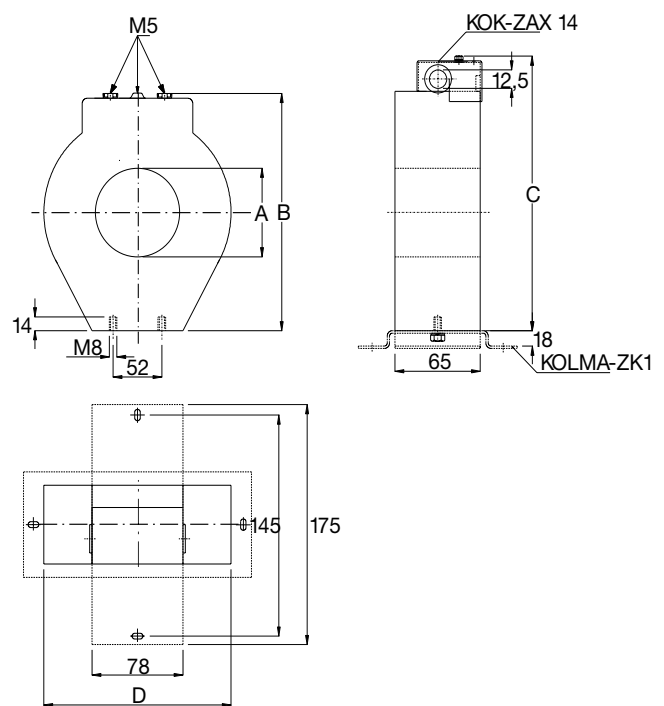
Description of accessory	Type together with transformer	Suitable for use
Fixing base	KOLMA-ZK 1	KOLMA 06 A1
Fixing base	KOLMA-ZK 1	KOLMA 06 A2
Fixing base	KOLMA-ZK 1	KOLMA 06 B2
Fixing base	KOLMA-ZK 1	KOLA 06 B2
Fixing base	KOLMA-ZK 2	KOLMA 06 D1
Fixing base	KOLMA-ZK 2	KOLMA 06 D2
Fixing base	KOLMA-ZK 2	KOLA 06 D2
Secondary terminal cover	KOK-ZAX 14	KOLMA 06 A2
Secondary terminal cover	KOK-ZAX 14	KOLMA 06 B2
Secondary terminal cover	KOK-ZAX 14	KOLA 06 B2
Secondary terminal cover	KOK-ZAX 14	KOLA 06 D2

Overall dimensions

KOLMA 06 A1

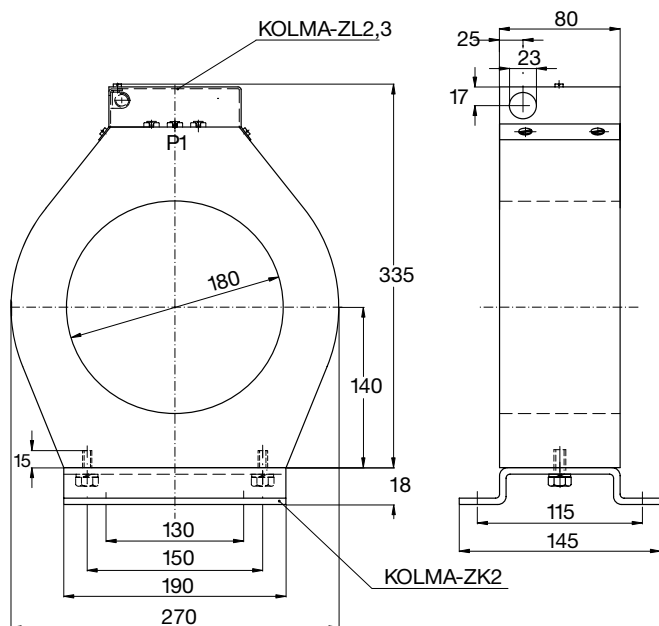


KOLMA 06 A2, B2

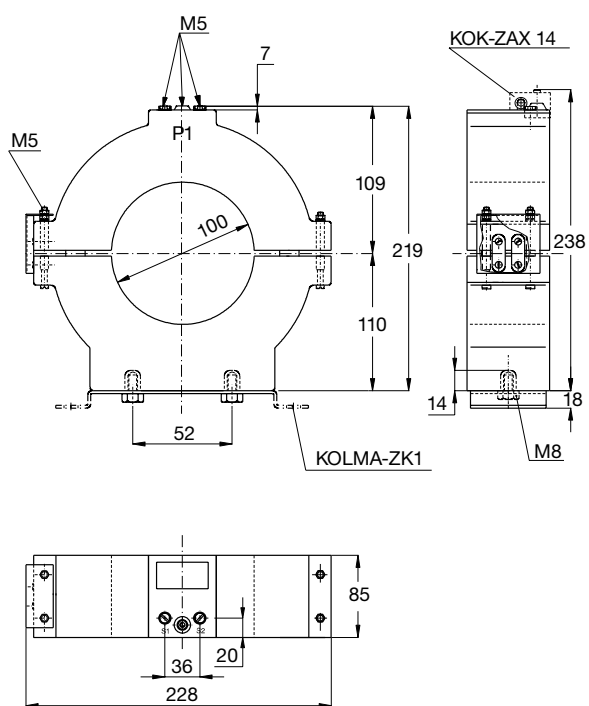


Type	Dims./mm			
KOLMA	A	B	C	D
06 A2	58	177	196	140
06 B2	100	229	249	196

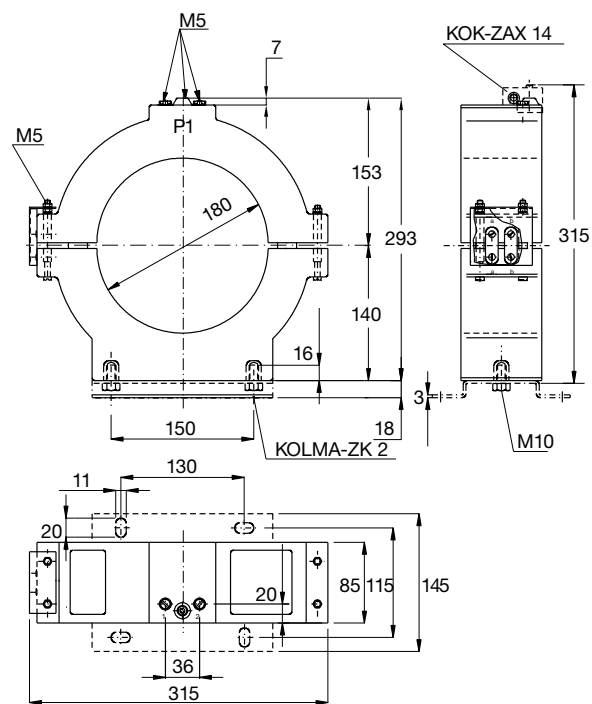
KOLMA 06 D1, D2



KOLA 06 B2



KOLA 06 D2



KOLA 06 J2

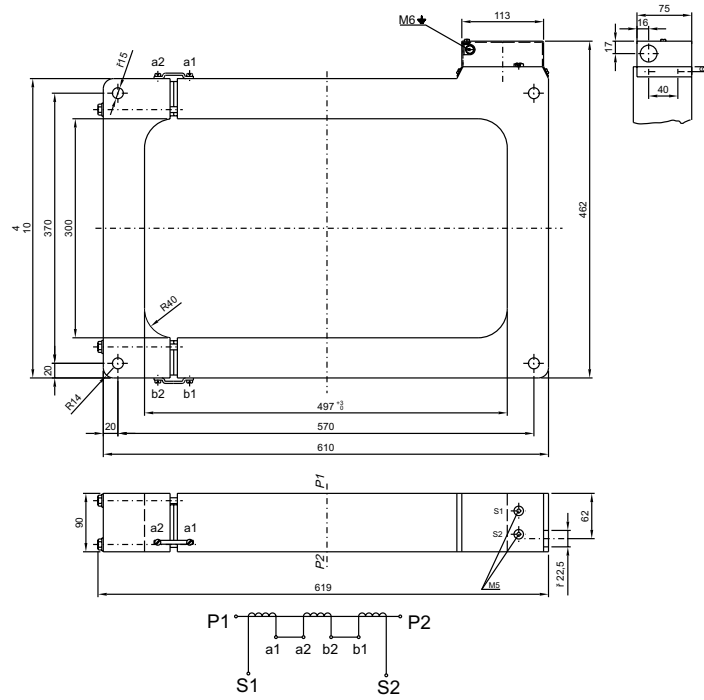


Table 5 KOLA 06 J2

Standards parameters for KOLA 06 J2 $f = 50 \text{ Hz}$

Type	Window diameter [mm]	Ratio [A]	Accuracy Class	Burden [VA]
KOLA 06 J2	300x497	100/1	10P10	1
KOLA 06 J2	300x497	200/5	10P10	2
KOLA 06 J2	300x497	300/1	10P10	5

Note: If you need other electrical parameters than given in tables please contact with our sales department.

Cable Current Transformers types: KOKM (indoor type)



Current transformer series KOKM for measuring of phase currents

KOKM current transformers are suitable for measuring of phase currents in low voltage switchgear. An uninsulated busbar or low voltage cable serves as the primary conductor. Series KOKM current transformers can also be used for measuring the phase current at voltages even higher than 0,72 kV (for KOKM 06) or 1,2 kV (for KOKM 1), if the insulation of the high voltage primary conductor fulfils the respective standards for the operating voltage. The secondary winding and ring shaped iron core is cast in resin which has good electrical and mechanical properties.

Technical data

Transformer type			KOKM 06	KOKM 1
Rated voltage	U_m	[kV]	0.72 ⁽¹⁾	1.2 ⁽¹⁾
Power frequency test voltage	U_p 1min	[kV]	3	6
Lighting test voltage	U_{pp}	[kV]	-	-
Frequency	f_n	[Hz]	50 and 60	
Max. primary current	I_{pn}	[A]	2 000	10 000
Rated secondary current	I_{sn}	[A]	1 and 5	
Rated thermal current	I_{cont}	[A]	$1,2 \times I_{pn}$ ⁽²⁾	
Short-time withstand current	I_{th} 1s	[kA]	$60 \times I_{pn}$ ⁽³⁾	
Peak withstand current	I_{dyn}	[kA]	$2,5 \times I_{th}$ ⁽⁴⁾	
Secondary terminals			For 6 mm ² conductor	
Operating temperature range		[°C]	- 5 ... + 40	
Transport and storage		[°C]	- 25 ... + 55	
Electrical standards			IEC, VDE, ANSI, BS, AS, CAN	

⁽¹⁾ The insulation level of the primary conductor determines the maximum operating voltage.

⁽²⁾ Max. I_{cont} for KOKM 06 $I_{cont} = 2\,400\text{ A}$, for KOKU 072 G4 $I_{cont} = 1\,000\text{ A}$, for KOKM $I_{cont} = 10\,000\text{ A}$

⁽³⁾ Max. $I_{th} = 90\text{ kA}$,

⁽⁴⁾ Max. $I_{dyn} = 225\text{ kA}$

Ordering data

Enquires for these transformers should mention the following data:

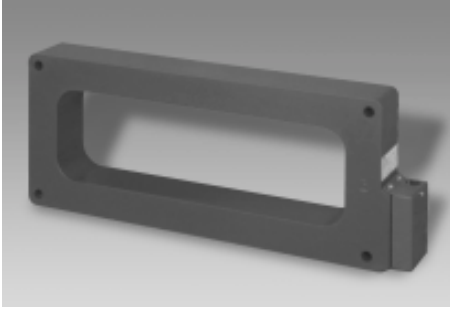
1. Quantity,
2. Type, (example: **KOKM 1 DC 10** ⁽¹⁾, **KOKU 1 KL 12** ⁽²⁾, **KOKM 06 J29** ⁽³⁾, **KOKU 072 G4** ⁽⁴⁾)
3. Current ratio I_{pn}/I_{sn} (A),
4. Burden (VA),
5. Accuracy class,
6. Electrical standards,
7. Window dimension (mm),
8. Other limiting data such as instrument security, dimensions of transformer, fixing of transformer (fixing base) etc.,
9. Indoor or outdoor use.

⁽¹⁾ Other name of Type for KOKM 1 you can choose from table 6.

⁽²⁾ Other name of Type for KOKU 1 you can choose from table 8.

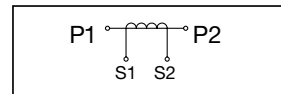
⁽³⁾ Other name of Type for KOKM 06 you can choose from table 7.

⁽⁴⁾ Electrical parameters and window dimension for KOKU 072 G4 include table 9.

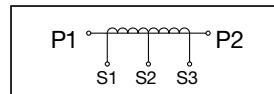


KOKM 06 J

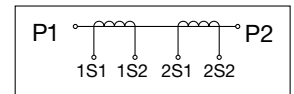
Terminal markings



one secondary winding
example: 100/1 [A/A]



multi-tap secondary winding
example: 50-100/1 [A/A]



two secondary windings
example: 800/5/5 [A/A/A]

Instructions for installation

Mounting of the cable current transformers

The cable current transformer may be installed either in vertical or in horizontal position. It can be mounted either by using bottom inserts or by using a separate fixing base, which in turns is fixed to the bottom inserts. When using the bottom inserts for mounting, the screws (M8) shall not be tightened in excess of the nominal torque; 9 Nm, for the screws (M6) 3.3 Nm, otherwise damage may occur. Use a torque spanner if necessary. The current transformer can be fastened to the cable which acts as primary conductor by means of a special fixing piece. In such cases it must be insured that the cable endures the strain caused by the weight of the transformer, especially in circumstances where vibration is involved. The secondary terminal screws, size M5, must not be tightened in excess of 2.5 Nm (M4 1.0 Nm).

Fastening of the primary cable

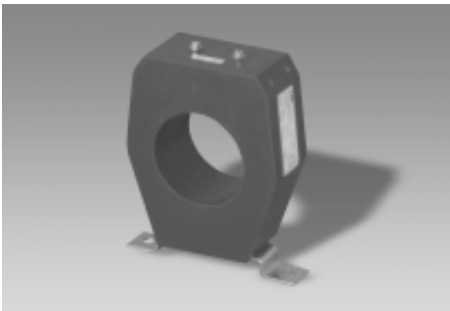
The cable acting as primary winding shall be entered through the opening in the cable current transformer. This must be done before the cable box belonging to the cable inserted through the primary opening is installed. If the cable box can be entered through the primary opening even when it is installed on the cable, the installation of the cable box can also be done before. With the KOLA 06 J2, the cable current transformer can be opened and thus the transformer can be installed even though the cable is already connected. The two halves of the ring core are tightened together with four screws which also guide the halves to the correct position. The secondary winding is distributed over both halves of the core. The two section of the winding are connected together with two connecting pieces.

Note:

The secondary terminals of the current transformer should never be left open-circuited, because in that case hazardous high voltages will be induced between the secondary terminals.

Instructions for maintenance

Cable current transformers do not need to be maintained. However, excessive dust or other kind of dirt can be brushed off the transformer. Dirty transformers can be cleaned with water, spirit, petrol or toluene. Traces of arcs and minor surface damages can be easily removed with sandpaper after which the surface is to be treated with silicone paste. Epoxy resin surfaces of the current transformer have also a high resistance to chemicals.



KOKM 1 FC6

The transformers can be used in areas, where the atmosphere includes corrosive gases such as sulphuric and nitrogenous compounds provided that secondary terminals and fixing base of the transformers have been ordered to meet the demands of the operating atmosphere. Instructions for repairing greater surface damages (such as cracks) must be requested from the manufacturer.

Storage instructions

For current transformers, the allowed storage temperature is - 40°C ...+ 55°C. The transformers shall be protected against direct sun light.

Package, Transport and Storage

Transformers assigned for export are packed in wooden cases lined with the asphalt building paper. During the transport of transformers one should pay attention to proper position of wooden cases in accordance with inscription and marks given on them and their protection against the influence of weather conditions. Transformer should be stored in dry and clean accommodations, protecting direct influence of precipitation and frost.

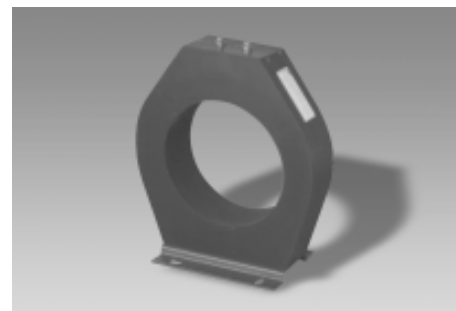
Warranty

The factory grants 24 months of warranty from the day of put to use of the transformer, but no longer than 36 months from the day of sell. The warranty concerns only manufacturing defects and does not include defects arose because of:

- improper transport,
- improper storage,
- not abiding of the instruction before installing and during operating of the transformers,
- improper selection of the transformer for the electric power system.

Procedure regarding the products after the end of their use.

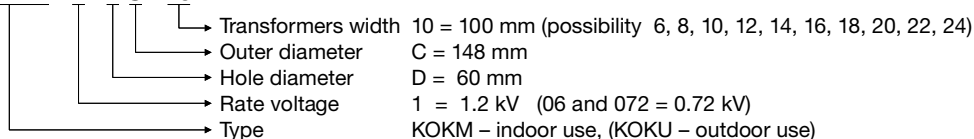
The manufacturer gets back or indicates the store place for instrument transformers of its own production, which the period of use is finished, in order to their recycling.



KOKM 1 RL 8

Table 6. KOKM 1

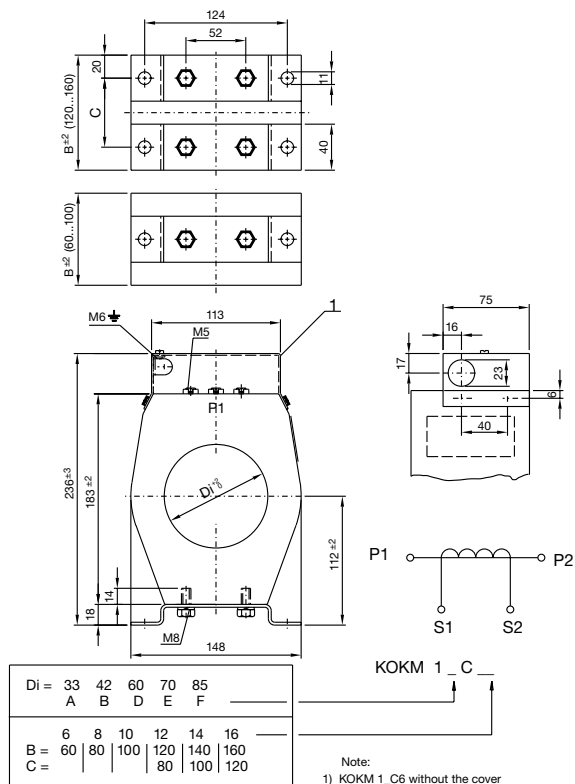
example **KOKM 1 DC 10**



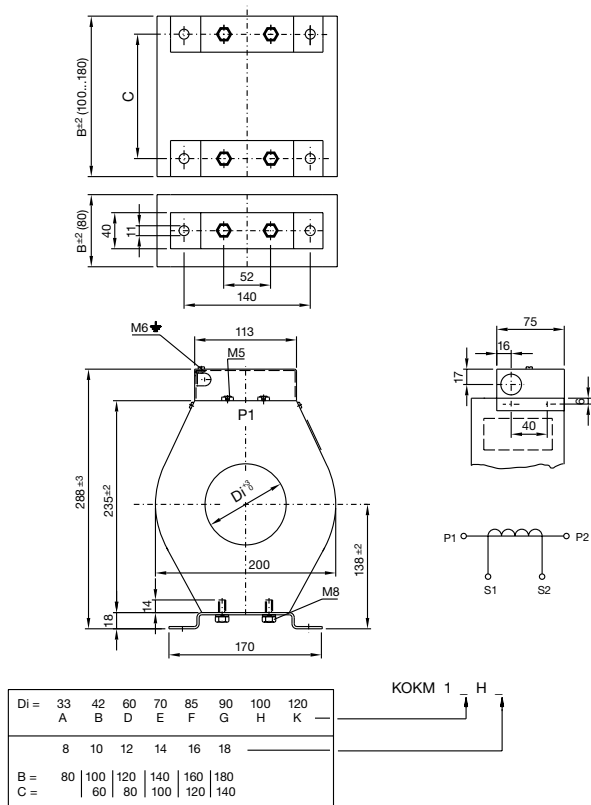
Outer diameter (mm)		Hole diameter (mm)														Drawing	Casting height (mm)	Total height (mm)	Hole center height (mm)
		A	B	D	E	F	G	H	K	N	R	U	W	X	Y				
		33	42	60	70	85	90	100	120	155	180	250	360	400	450				
C	148	60 160	60 160	60 160	60 160	60 160										KOKM 1_C _	183	236	112
F	186	60 160	60 160	60 160	60 160	60 160	60 160	60 160								KOKM 1_F _	213	266	131
H	200	80 180	80 180	80 180	80 180	80 180	80 180	80 180	80 180							KOKM 1_H _	235	288	138
K	250	80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200						KOKM 1_K _	275	328	158
L	270	80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200					KOKM 1_L _	297	350	158
M	280	80 240	80 240	80 240	80 240	80 240	80 240	80 240	80 240	80 240	80 240	80 240				KOKM 1_M _	297	350	158
P	340		80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200			KOKM 1_P _	379	432	204
T	450					80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200		KOKM 1_T _	465	500	225
W	590						80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200	KOKM 1_W _	605	653	300

Overall dimensions

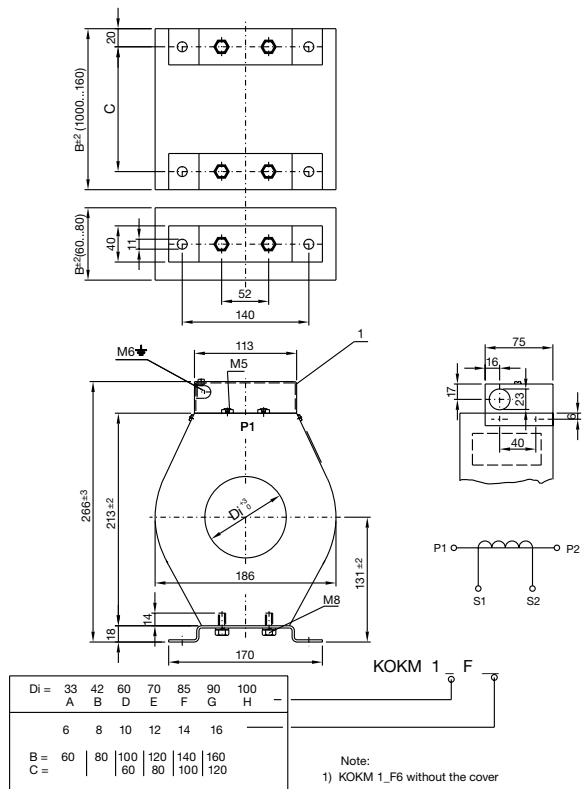
KOKM 1_C_



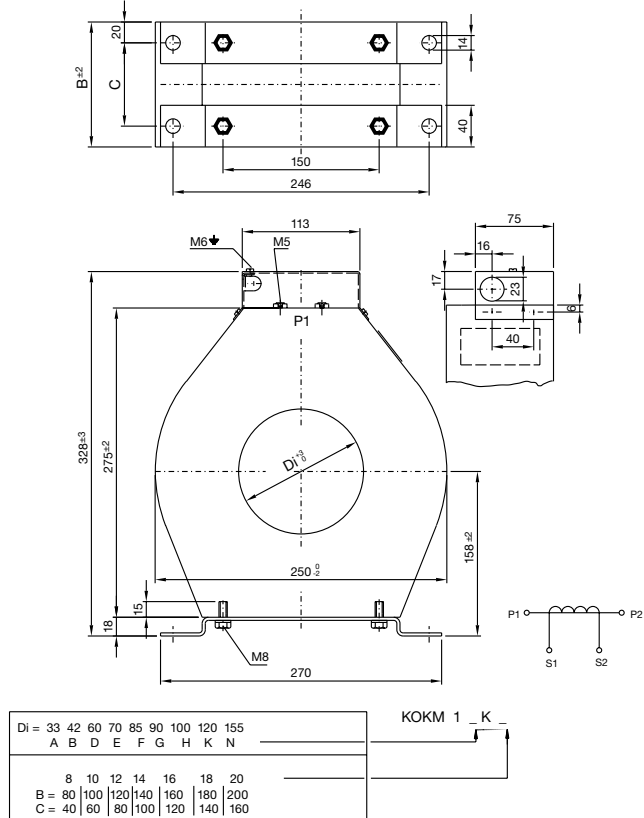
KOKM 1_H_



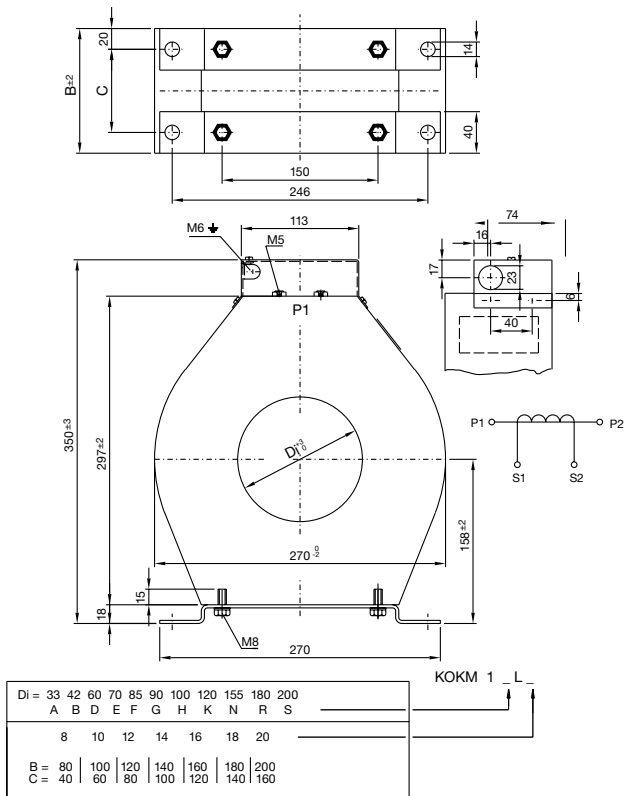
KOKM 1_F_



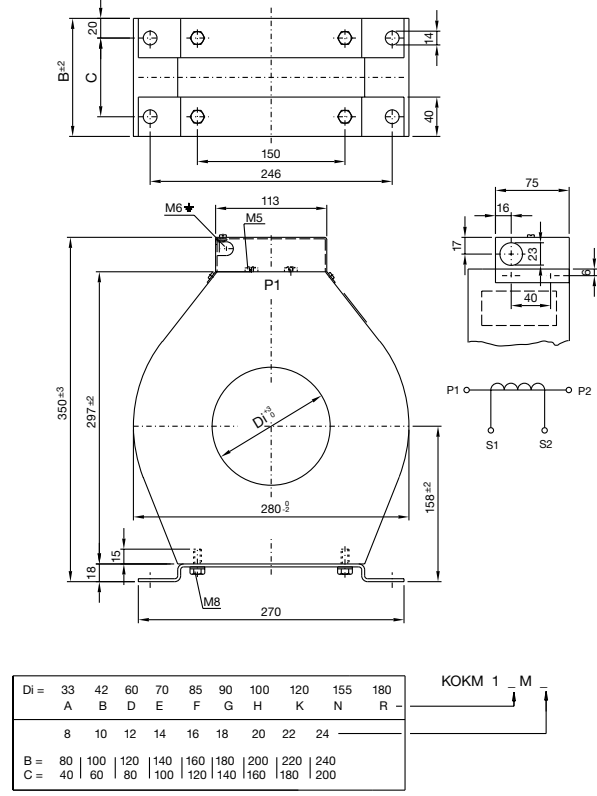
KOKM 1_K_



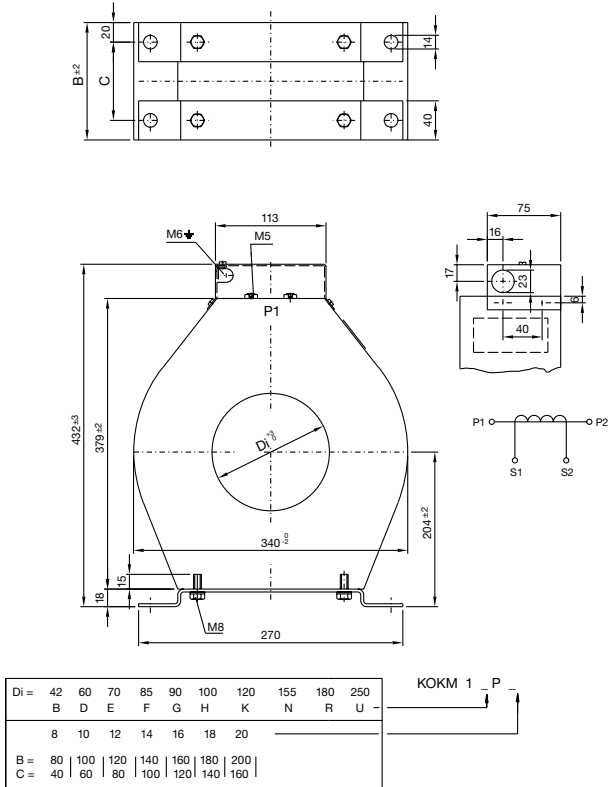
KOKM 1_L



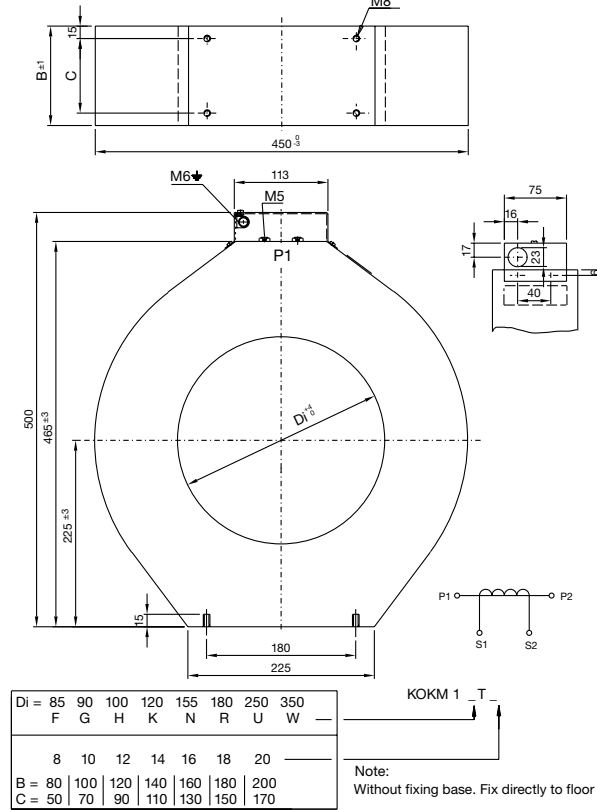
KOKM 1_M



KOKM 1_P



KOKM 1_T



KOKM 1_W_

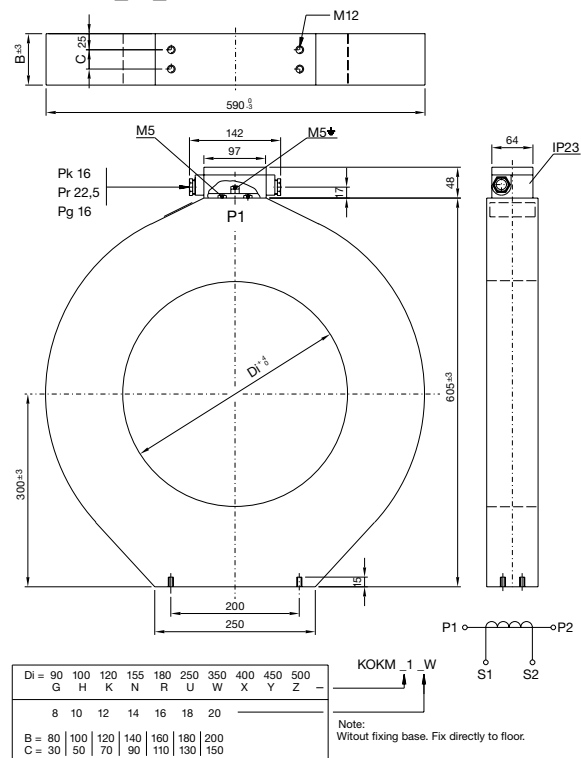
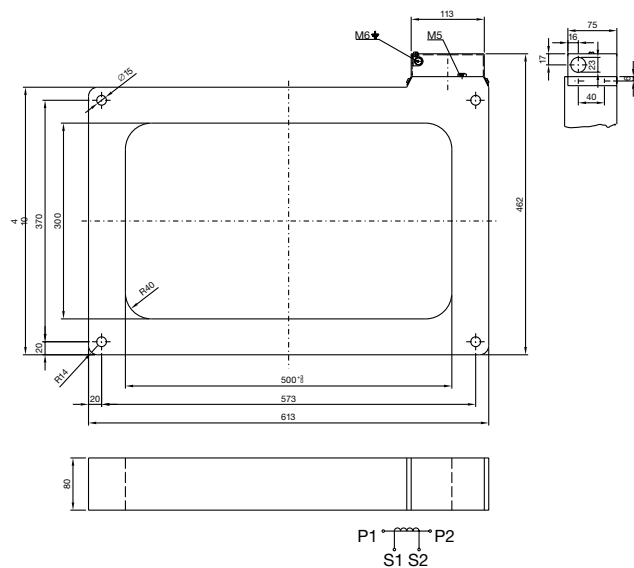


Table 7. KOKM 06

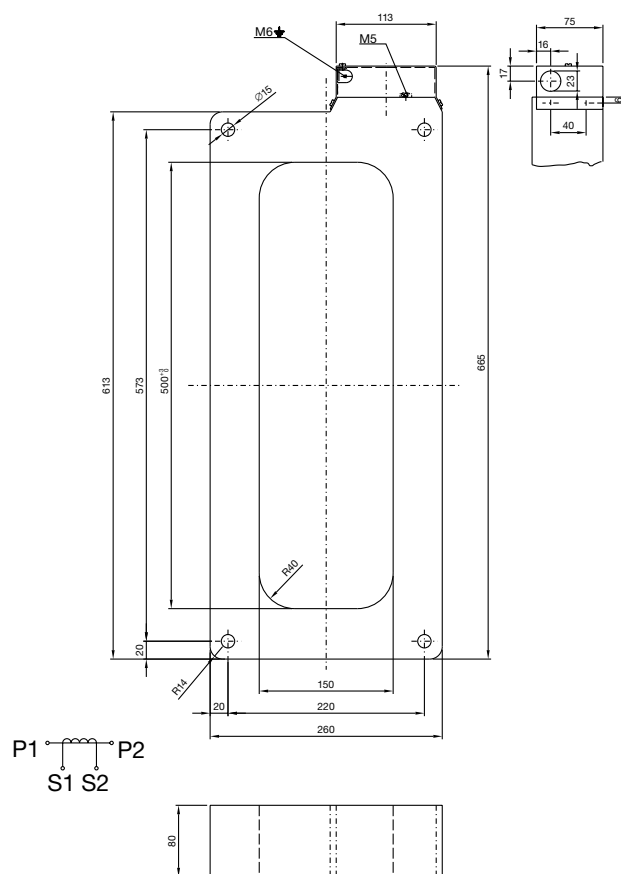
Standards parameters for KOKM 06 J_ (window type) f = 50 Hz

Type	Window diameter [mm]	Ratio [A]	Accuracy Class	Burden [VA]
KOKM 06 J2	300x500	50/5	10P10	0.5
KOKM 06 J2	300x500	100/1	10P10	2
KOKM 06 J2	300x500	100/5	10P10	1.5
KOKM 06 J2	300x500	100/5	3	2
KOKM 06 J2	300x500	250/5	10P10	1
KOKM 06 J2	300x500	400/5	10P10	5
KOKM 06 J2	300x500	500/1	5P20	10
KOKM 06 J2	300x500	500/5	10P10	5
KOKM 06 J2	300x500	2000/5	0.5	15
KOKM 06 J21	500x150	30/1	10P10	0.5
KOKM 06 J21	500x150	50/1	10P10	1
KOKM 06 J21	500x150	100/1	10P10	1
KOKM 06 J21	500x150	100/5	10P10	1
KOKM 06 J21	500x150	150/1	10P10	1
KOKM 06 J21	500x150	500/5	10P10	10
KOKM 06 J22	300x200	100/1	10P10	2
KOKM 06 J22	300x200	300/1	5P10	15
KOKM 06 J22	300x200	1000/5	5P10	15
KOKM 06 J23	600x200	50/1	10P10	1
KOKM 06 J23	600x200	60/1	10P10	1
KOKM 06 J23	600x200	100/1	10P10	3
KOKM 06 J23	600x200	200/1	10P10	2
KOKM 06 J23	600x200	300/5	5P10	2
KOKM 06 J24	300x250	50/1	10P10	1
KOKM 06 J24	300x250	150/1	10P10	2
KOKM 06 J29	450x650	50/1	10P10	1
KOKM 06 J29	450x650	50/5	10P10	1
KOKM 06 J29	450x650	100/1	10P10	1
KOKM 06 J29	450x650	100/5	10P10	1
KOKM 06 J29	450x650	400/1	5P10	10

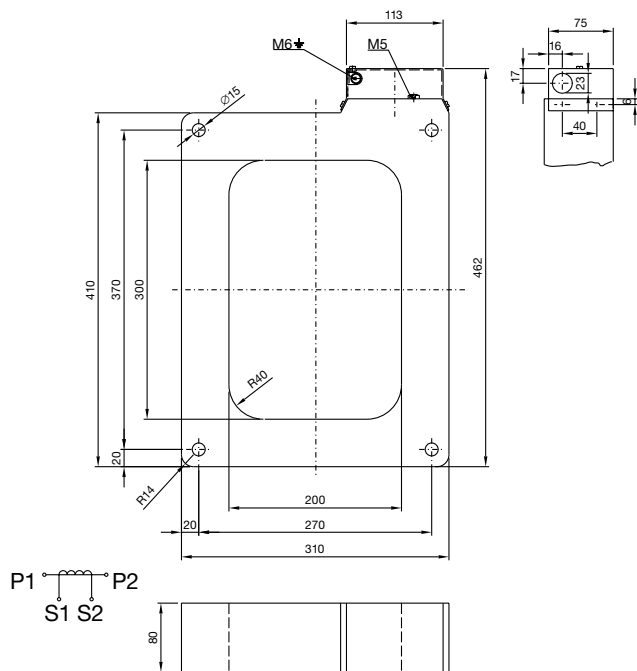
KOKM 06 J2



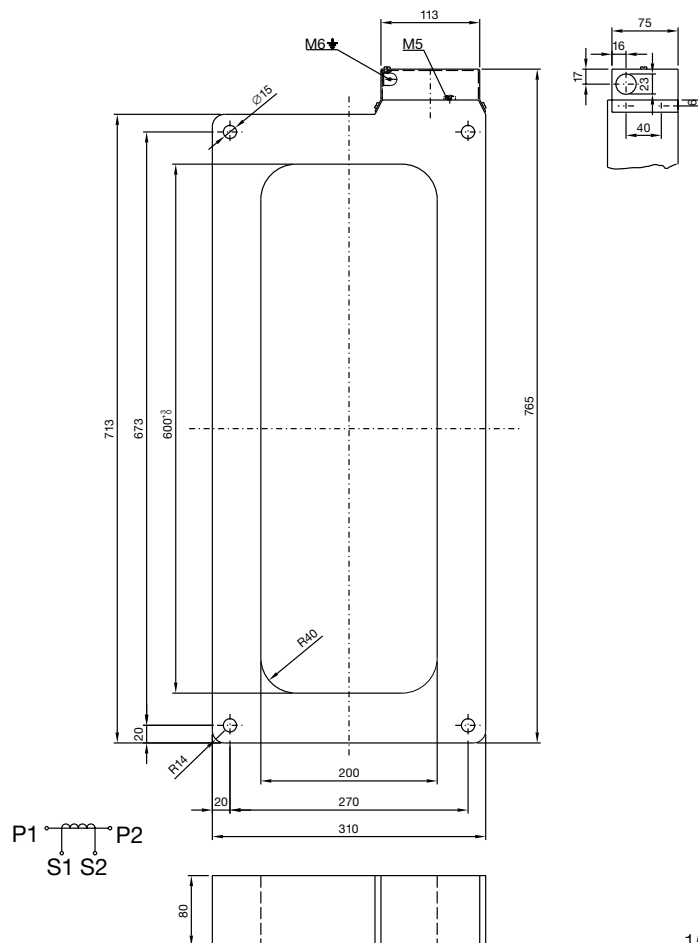
KOKM 06 J21_



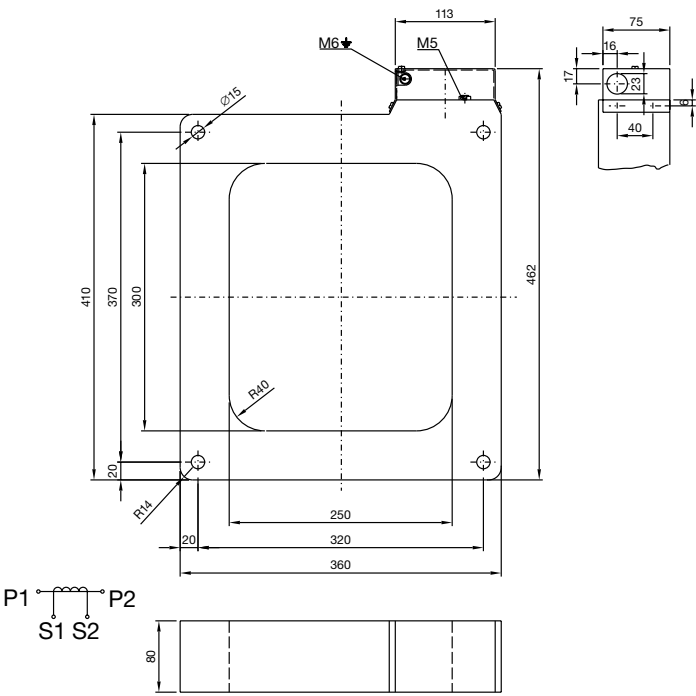
KOKM 06 J22



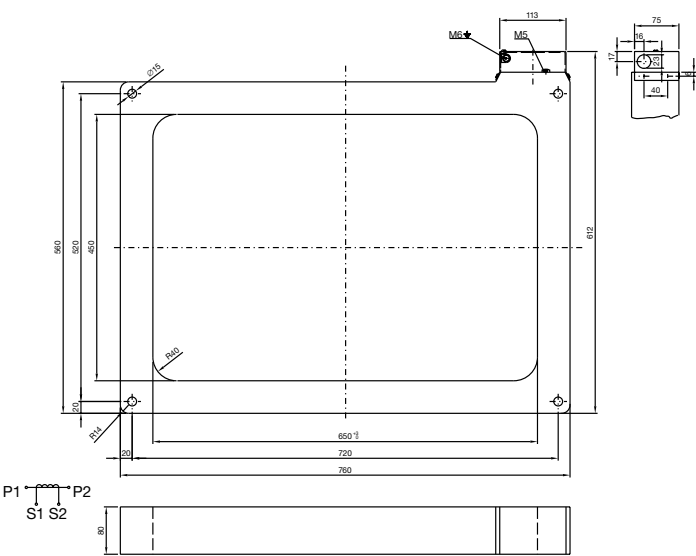
KOKM 06 J23



KOKM 06 J24



KOKM 06 J29_



Cable Current Transformers type KOKU (outdoor type)

Current transformer series KOKU for measuring of phase currents

KOKU current transformers are suitable for measuring of phase currents in low voltage switchgear. An uninsulated busbar or low voltage cable serves as the primary conductor. Series KOKU current transformers can also be used for measuring the phase current at voltages even higher than 0,72 kV (for KOKU 072 G4) or 1,2 kV (for KOKU 1), if the insulation of the high voltage primary conductor fulfils the respective standards for the operating voltage. The secondary winding and ring shaped iron core is cast in resin which has good electrical and mechanical properties.

Technical data

Transformer type			KOKU 072 G4	KOKU 1
Rated voltage	U_m	[kV]	0.72 ⁽¹⁾	1.2 ⁽¹⁾
Power frequency test voltage	U_p 1min	[kV]	3	6
Lighting test voltage	U_{pp}	[kV]	-	-
Frequency	f_n	[Hz]	50 and 60	
Max. primary current	I_{pn}	[A]	800	10 000
Rated secondary current	I_{sn}	[A]	1 and 5	
Rated thermal current	I_{cont}	[A]	$1,2 \times I_{pn}$ ⁽²⁾	
Short-time withstand current	I_{th} 1s	[kA]	$60 \times I_{pn}$ ⁽³⁾	
Peak withstand current	I_{dyn}	[kA]	$2,5 \times I_{th}$ ⁽⁴⁾	
Secondary terminals			For 6 mm ² conductor	
Operating temperature range		[°C]	- 5 ... + 40	
Transport and storage		[°C]	- 25 ... + 55	
Electrical standards			IEC, VDE, ANSI, BS, AS, CAN	

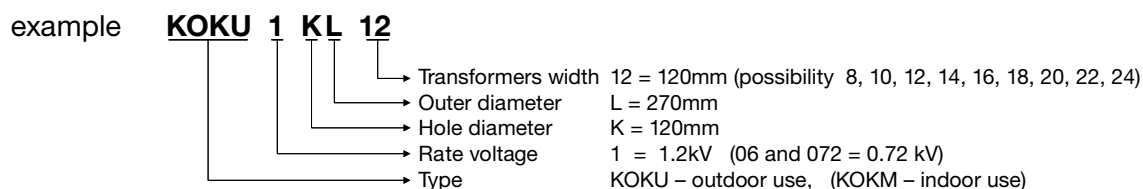
⁽¹⁾ The insulation level of the primary conductor determines the maximum operating voltage.

⁽²⁾ Max. I_{cont} for KOKM 06 $I_{cont} = 2\,400$ A, for KOKU 072 G4 $I_{cont} = 1\,000$ A, for KOKU 1 $I_{cont} = 10\,000$ A

⁽³⁾ Max. $I_{th} = 90$ kA,

⁽⁴⁾ Max. $I_{dyn} = 225$ kA

Table 8. KOKU 1



Outer diameter (mm)		Hole diameter (mm)														Drawing	Casting height (mm)	Total height (mm)	Hole center height (mm)												
		A	B	D	E	F	G	H	K	N	R	U	W	X	Y					Z											
		33	42	60	70	85	90	100	120	155	180	250	360	400	450					500											
C	148	80 160	80 160	80 160	80 160	80 160	<div>← Range of transformers width ↓</div>										KOKU 1 _C _	183	249	112											
F	186	80 160	80 160	80 160	80 160	80 160											80 160											KOKU 1 _F _	213	279	131
H	200	80 180	80 180	80 180	80 180	80 180											80 180	80 180	80 180							KOKU 1 _H _	235	301	138		
K	250	80 200	80 200	80 200	80 200	80 200											80 200	80 200	80 200	80 200						KOKU 1 _K _	275	341	158		
L	270	80 200	80 200	80 200	80 200	80 200											80 200	80 200	80 200	80 200	80 200					KOKU 1 _L _	297	363	158		
M	280	80 240	80 240	80 240	80 240	80 240	80 240	80 240	80 240	80 240	80 240					KOKU 1 _M _	297	363	158												
P	340		80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200				KOKU 1 _P _	379	445	204												
T	450					80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200				KOKU 1 _T _	465	513	225											
W	590						80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200	80 200	KOKU 1 _W _	605	653	300											

Table 9.

Standards parameters for KOKU 72 G4

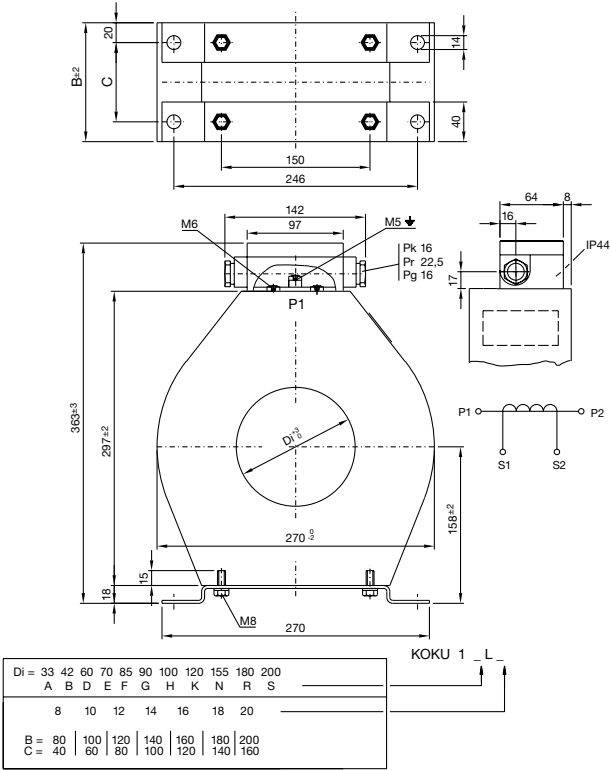
Type	Window diameter	Total height	Hole center height	Ratio	Accuracy Class	Burden	Short circuit current $I_{th, 3s}$	Standard
	[mm]	[mm]	[mm]	[A]		[VA]	[kA]	
KOKU 072 G4	Ø135	230	125	600/1	5P10	3	25	IEC 60044-1

Note: If you need other electrical parameters than given in tables please contact with our sales department.

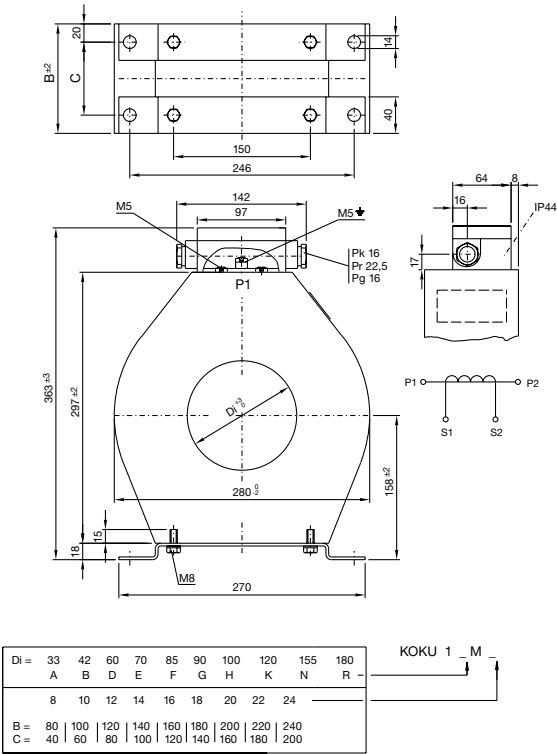
KOKU 1_C_



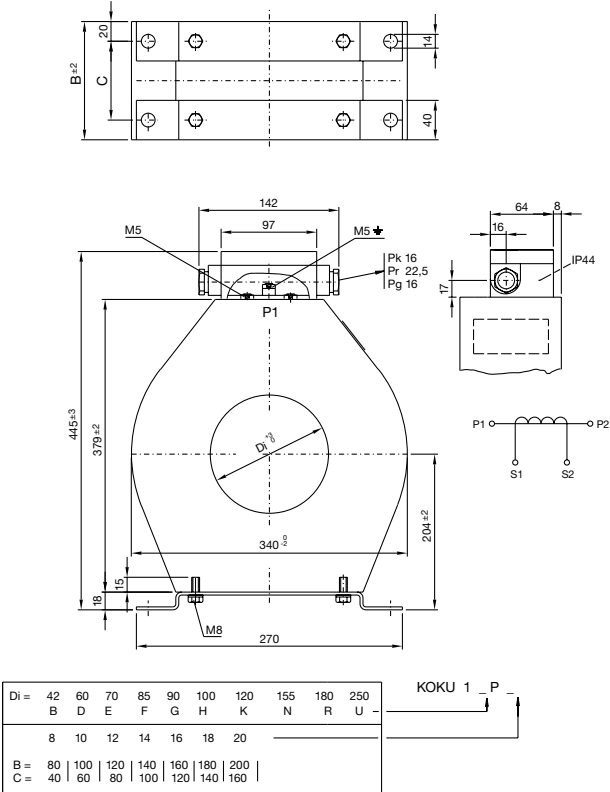
KOKU 1_L_



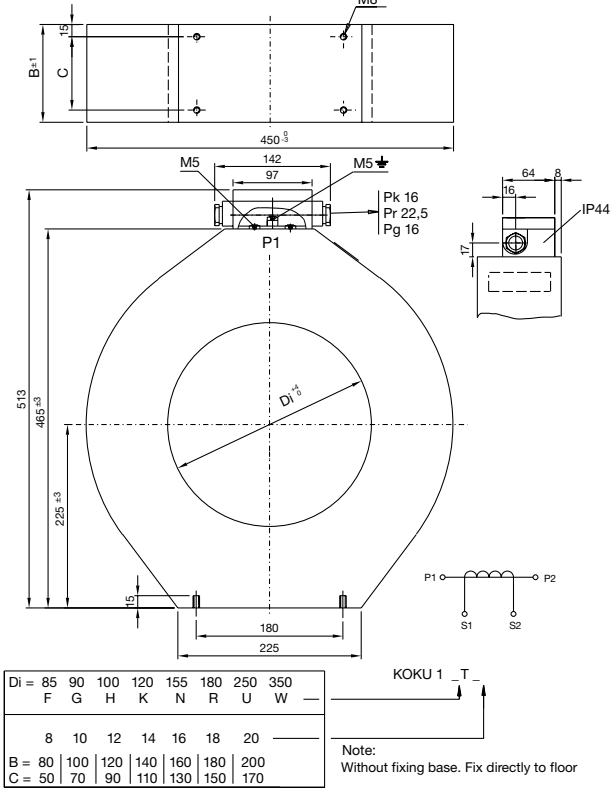
KOKU 1_M_



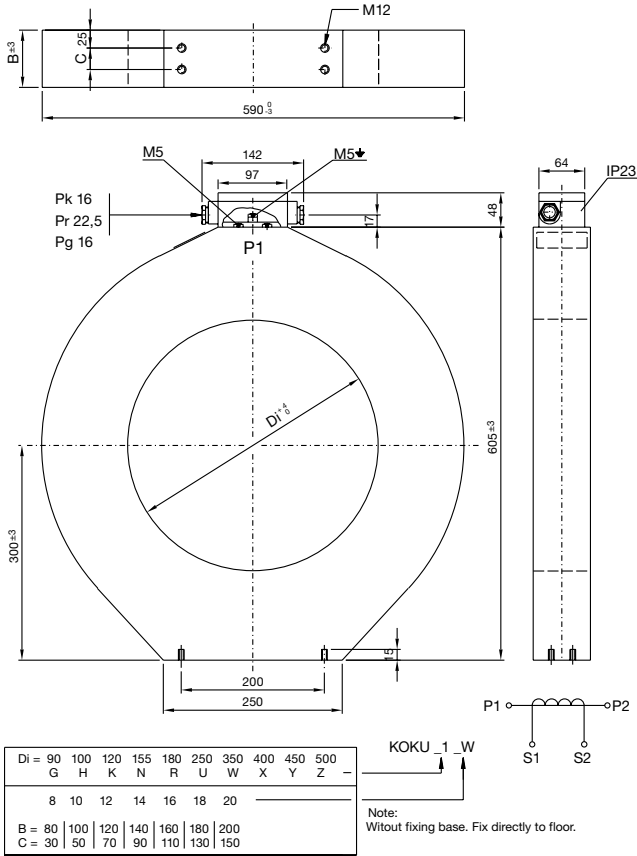
KOKU 1_P_



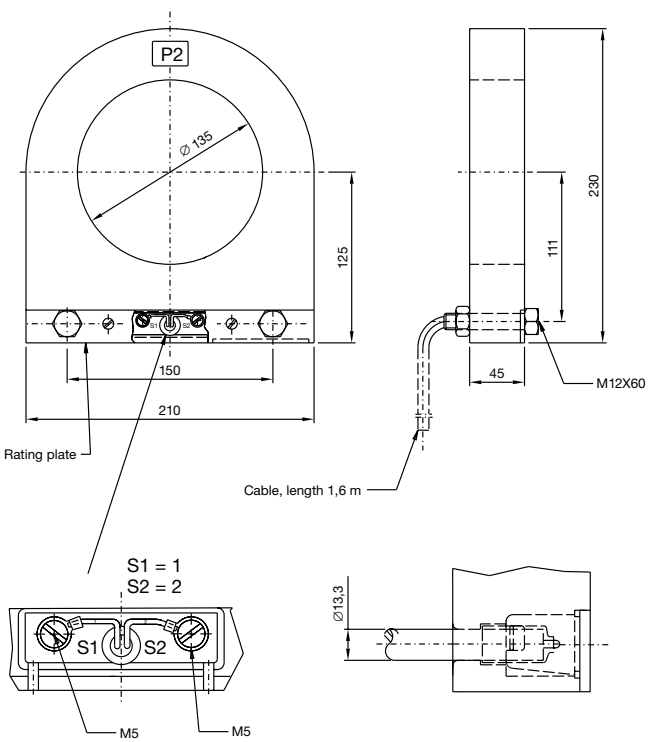
KOKU 1_T_



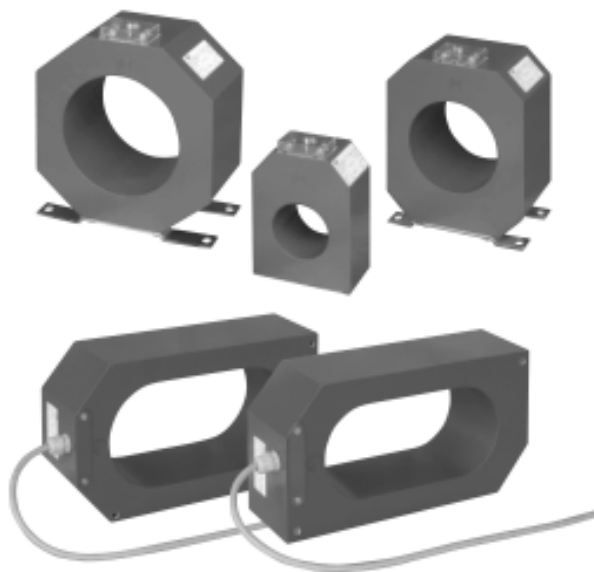
KOKU 1_W_



KOKU 072 G4



Cable Current Transformers type KOKM (for ZX panels)



KOKM 1 EB – is the indoor, cable, low voltage current transformer in resin insulation. Transformers of KOKM type are suitable for measurement of phase currents in low voltage switchgears. As the primary conductor is used the non-insulated busbar or the low voltage cable. Current transformers of KOKM series can be also used for measurement of the phase current at voltages even higher than 1,2 kV, if the insulation of the high voltage primary conductor fulfils the requirements of relevant standards relating to the working voltage.

Technical data:

Type	KOKM 1EB
Maximum number of windings	1
Level of insulation	1/6/-
Highest permissible voltage of the current transformer U_r	1,2 kV
Rating test voltage of insulation (50 Hz, 1 min U_p)	6 kV
Rating frequency	50 Hz
Rating thermal current	$1,2 \times I_{pn}$
Short-time withstand thermal current I_{th} , 1s	$60 \times I_{pn}$
Rating peak current I_{dyn}	$2,5 \times I_{th}$
Working temperature range	-5...+40°C
Conformity with standards	-PN-EN, EN, VDE, ANSI, BS, AS, CAN

Example of an order:

In the order shall be specified: type, ratio, I_{th} , load, class and number of pieces, for example:

KOKM1EB 8 150/1A/A, $I_{th} = 60 \times I_{pn}$, 1VA 10P10 - 3 pieces

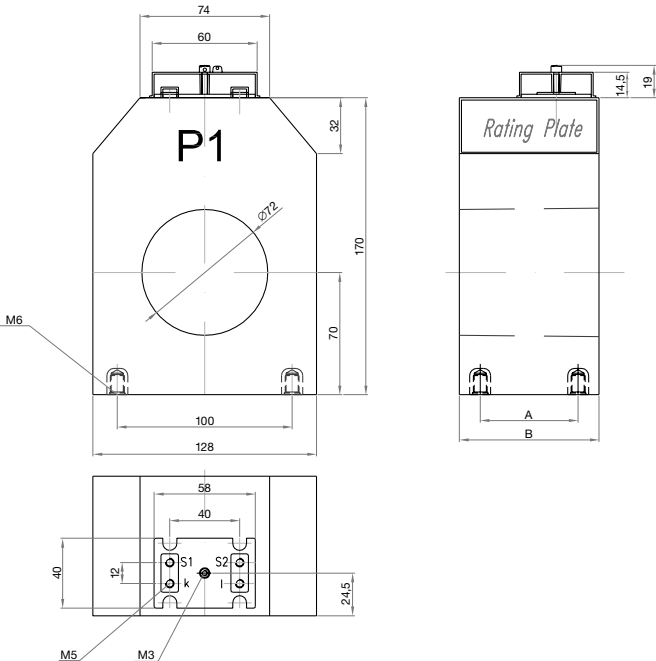
Table for selecting current transformers KOKM 1 EB

Primary Current I_{pn} [A]	Maximum permissible load [VA]									
	Secondary current $I_{sn} = 1$ [A]					Secondary current $I_{sn} = 5$ [A]				
	Measurement class FS		Protection class Fa			Measurement class FS		Protection class Fa		
	0,5	1	10P10	5P10	5P20	0,5	1	10P10	5P10	5P20
50	–	–	0,5	0,5	0,5	–	–	0,5	–	–
60	–	–	0,5	0,5	0,5	–	–	0,5	0,5	–
70	–	0,5	1	1	0,5	–	0,5	0,5	0,5	–
75	–	1	1	1	0,5	–	1	1	1	–
100	–	2,5	1,5	1,5	0,5	–	1,5	1	1	–
110	0,5	4	1,5	1,5	0,5	–	2,5	1	1	–
120	1	4,5	1,5	1,5	0,5	0,5	3	1,5	1,5	–
140	1	4,5	1,5	1,5	0,5	1,5	7	2	2	0,5
150	1,5	6	2	2	0,5	1,5	7	2	2	0,5
200	5,5	8,5	2,5	2,5	0,5	2,5	12	2,5	2,5	1
240	5,5	20	2,5	2,5	0,5	8	25	3,5	3,5	1
250	4,5	25	3	3	0,5	11	28	3,5	3,5	1
300	12	40	3	3	0,5	15	40	4,5	4,5	1,5
350	9	27	5	5	1	22	45	5	5	1,5
400	22	40	4,5	4,5	1,5	30	60	6	6	2
500	35	50	6	6	2	45	60	6	6	1,5
600	60	60	6	6	1	60	60	5,5	5,5	–
630	60	60	5	5	0,5	60	60	6	6	–
800	60	60	5	5	–	60	60	7	7	–
1000	60	60	6	6	–	60	60	–	–	–

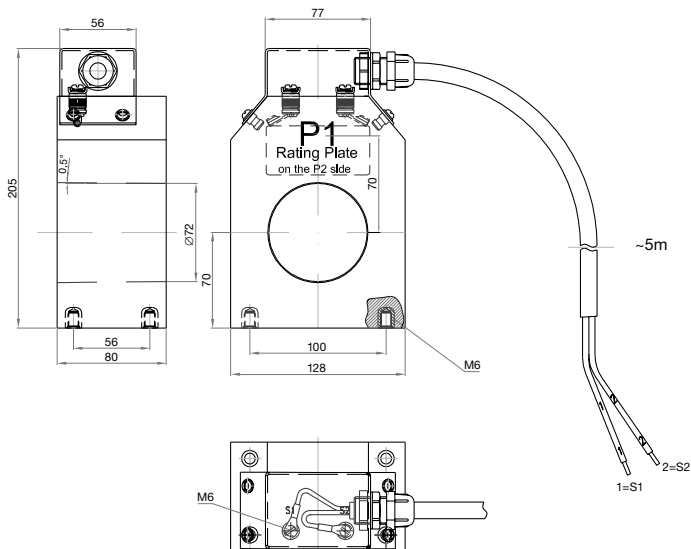
At special request can be delivered also current transformers with values of secondary current different these given in the table above (e.g. 2 a or 4,3 A) and current transformers for frequency 60 Hz.

Overall dimensions

KOKM 1 EB version 01

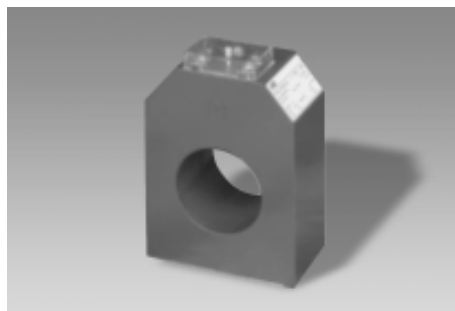


KOKM 1 EB version 02

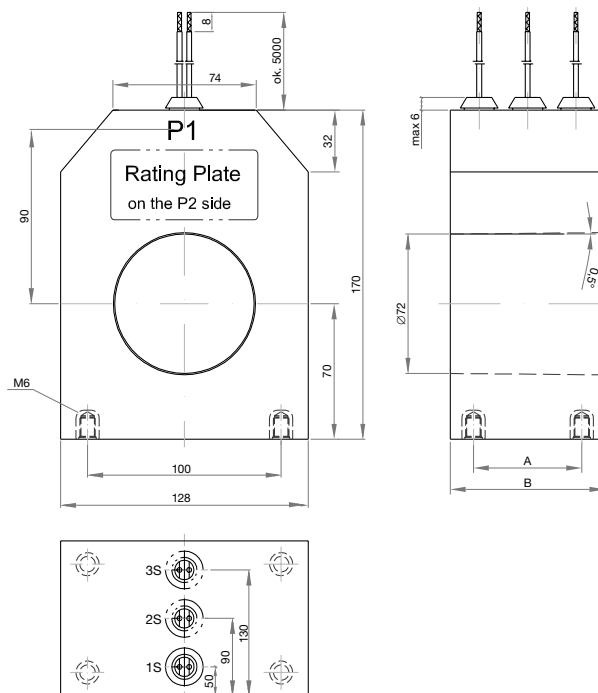


8	56	80
KOKM 1 EB ...	A	B

KOKM 1 EB version 03



KOKM 1 EB 8 ver. 1



KOKM 06 NN – is the indoor, cable, low voltage current transformer in resin insulation. Transformers of KOKM type are suitable for measurement of phase currents in low voltage switchgears. As the primary conductor is used the non-insulated busbar or the low voltage cable. Current transformers of KOKM series can be also used for measurement of the phase current at voltages even higher than 0,72 kV, if the insulation of the high voltage primary conductor fulfils the requirements of relevant standards relating to the working voltage.

Technical data:

Type KOKM 06 NN
 Maximum number of windings 1
 Level of insulation 0,6/3/-
 Highest permissible voltage of the current transformer U_r 0,72 kV
 Rating test voltage of insulation (50 Hz, 1 min U_p) 3 kV
 Rating frequency 50 Hz
 Rating thermal current $1,2 \times I_{pn}$
 Short-time withstand thermal current I_{th} , 1s $60 \times I_{pn}$
 Rating peak current I_{dyn} $2,5 \times I_{th}$
 Working temperature range -5...+40°C
 Conformity with standards - PN-EN, EN, VDE, ANSI, BS, AS, CAN

Example of an order:

In the order shall be specified: type, ratio, load, class and number of pieces, for example:

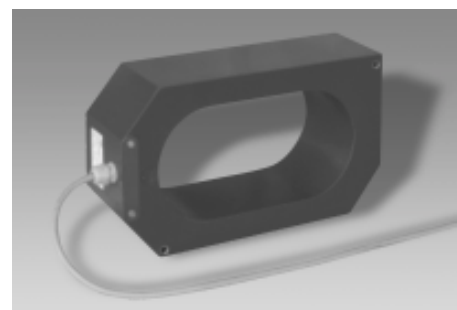
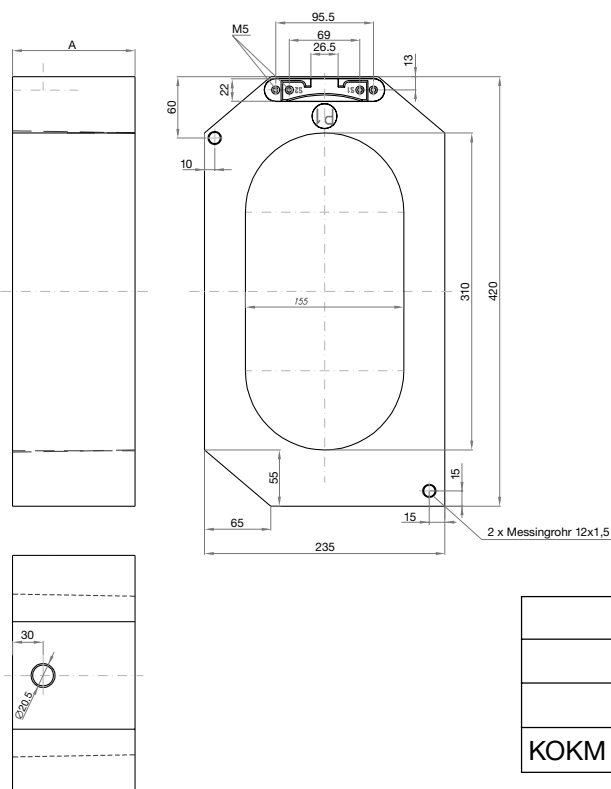
KOKM 06 NN; 12 150/1 A/A, $I_{th} = 60 \times I_{pn}$, 1 VA 10P10 - 3 pieces

Table for selecting current transformers KOKM 06 NN

Primary Current I_{pn} [A]	Maximum permissible load [VA]											
	Secondary current $I_{sn} = 1$ [A]						Secondary current $I_{sn} = 5$ [A]					
	Measurement class FS		Protection class Fa				Measurement class FS		Protection class Fa			
	0,5	1	10P10	10P20	5P10	5P20	0,5	1	10P10	10P20	5P10	5P20
50	–	–	3,5	1,5	–	–	–	–	3	1	–	–
60	–	–	4	2	–	–	–	–	3,5	1,5	–	–
70	–	–	5	2,5	–	–	–	–	4,5	1,5	–	–
75	–	–	5,5	2,5	–	–	–	–	5	2	–	–
100	–	–	7	3,5	7	1	–	–	6	2,5	6	1
110	–	–	7,5	4	7,5	1,5	–	–	7	3	7	1,5
120	–	–	8	4	8	4	–	–	7	2,5	7	2,5
140	–	–	10	5	10	5	–	–	9	3,5	9	3,5
150	–	–	10	5	10	5	–	–	9	4	9	4
200	–	8	14	7	14	7	–	9	13	5,5	13	5,5
240	–	15	17	8,5	17	8,5	–	16	15	6,5	15	6,5
250	–	19	18	9	18	9	–	19	16	7	16	7
300	–	31	21	10	21	10	–	31	20	8	20	8
350	0,5	50	25	12	25	12	–	50	22	10	22	10
400	15	60	28	13	28	13	15	55	25	11	25	11
500	35	90	34	16	34	16	35	60	31	14	31	14
600	60	90	41	17	41	17	60	90	38	15	38	15
630	60	90	42	18	42	18	60	90	39	16	39	16
800	90	90	52	23	52	23	90	90	49	21	49	21
1000	90	90	66	28	66	28	90	90	63	26	63	26
1200	90	90	80	34	80	34	90	90	77	32	77	32
1250	90	90	82	35	82	35	90	90	79	33	79	33
1500	90	90	90	40	90	40	90	90	90	40	90	40

At special request can be delivered also current transformers with values of secondary current different these given in the table above (e.g. 2 A or 4,3A) and current transformers for frequency 60 Hz.

KOKM 1 NN



KOKM 1 NN 12

	12	120
	9	90
	6	60
KOKM 06 NN ...	A	

KOKM 06 LM – is the indoor, cable, low voltage current transformer in resin insulation. Transformers of KOKM type are suitable for measurement of phase currents in low voltage switchgears. As the primary conductor is used the non-insulated busbar or the low voltage cable. Current transformers of KOKM series can be also used for measurement of the phase current at voltages even higher than 0,72 kV, if the insulation of the high voltage primary conductor fulfils the requirements of relevant standards relating to the working voltage.

Technical data:

Type KOKM 06 LM
 Maximum number of windings 1
 Level of insulation 0,6/3/-
 Highest permissible voltage of the current transformer U_r 0,72 kV
 Rating test voltage of insulation (50 Hz, 1 min U_p) 3 kV
 Rating frequency 50 Hz
 Rating thermal current $1,2 \times I_{pn}$
 Short-time withstand thermal current I_{th} , 1 s $60 \times I_{pn}$
 Rating peak current I_{dyn} $2,5 \times I_{th}$
 Working temperature range -5...+40°C
 Conformity with standards - PN-EN, EN, VDE, ANSI, BS, AS, CAN

Example of an order:

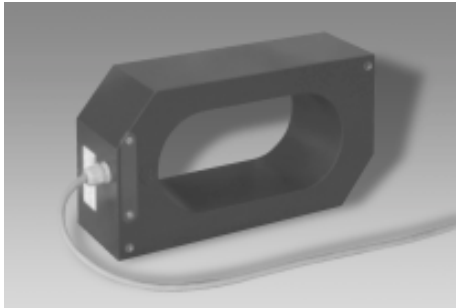
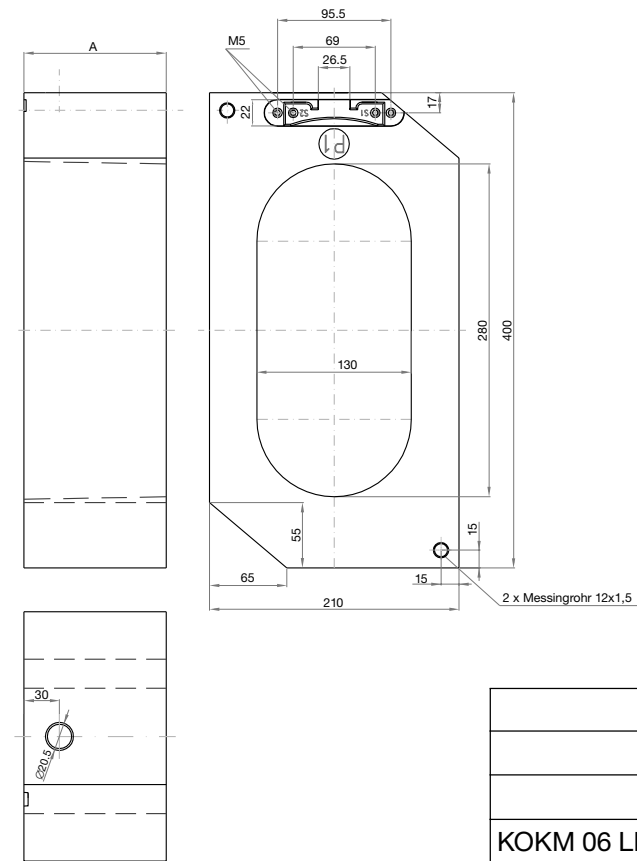
In the order shall be specified: type, ratio, load, class and number of pieces, for example:

KOKM 06 LM 12 150/1 A/A, $I_{th} = 60 \times I_{pn}$, 1 VA 10P10 - 3 pieces

Table for selecting current transformers KOKM 06 LM

Primary Current I_{pn} [A]	Maximum permissible load [VA]											
	Secondary current $I_{sn} = 1$ [A]						Secondary current $I_{sn} = 5$ [A]					
	Measurement class FS		Protection class Fa				Measurement class FS		Protection class Fa			
	0,5	1	10P10	10P20	5P10	5P20	0,5	1	10P10	10P20	5P10	5P20
50	–	–	3,5	1,5	–	–	–	–	3	1	–	–
60	–	–	3,5	1,5	–	–	–	–	3,5	1,5	–	–
70	–	–	5	2,5	–	–	–	–	4,5	1,5	–	–
75	–	–	5	2,5	5	–	–	–	5	2	–	–
100	–	–	7	3,5	5	1,5	–	–	6	2,5	6	1,5
110	–	–	8	4	8	3,5	–	–	7	3	7	2,5
120	–	–	8	4	8	4	–	–	7	3	7	3
140	–	–	10	5	10	5	–	–	9	3,5	9	3,5
150	–	–	11	5	11	5	–	–	9	4	9	4
200	–	11	13	7	13	7	–	11	13	5,5	13	5,5
240	–	20	16	8,5	16	8,5	–	20	15	6,5	15	6,5
250	–	23	18	9	18	9	–	23	16	7	16	7
300	–	35	21	10	21	10	–	35	20	8	20	8
350	12	55	25	12	25	12	12	55	22	10	22	10
400	20	60	28	13	28	13	20	60	25	11	25	11
500	40	90	34	16	34	16	40	90	31	14	31	14
600	60	90	41	17	47	17	60	90	38	15	38	15
630	60	90	42	18	42	18	60	90	39	16	39	16
800	90	90	52	23	52	23	90	90	49	21	49	21
1000	90	90	66	28	66	28	90	90	63	23	63	23
1200	90	90	80	34	80	34	90	90	77	32	77	32
1250	90	90	82	35	82	35	90	90	79	33	79	33
1500	90	90	90	40	90	40	90	90	90	40	90	40

KOKM 1 LM



KOKM 1 LM 12

12	120
9	90
6	60
KOKM 06 LM ...	A

KOKM 1LH – is the indoor, cable, low voltage current transformer in resin insulation. Transformers of KOKM type are suitable for measurement of phase currents in low voltage switchgears. As the primary conductor is used the non-insulated busbar or the low voltage cable. Current transformers of KOKM series can be also used for measurement of the phase current at voltages even higher than 1,2 kV, if the insulation of the high voltage primary conductor fulfils the requirements of relevant standards relating to the working voltage.

Technical data:

Type KOKM 06 LH
Maximum number of windings 1
Level of insulation 1/6/-
Highest permissible voltage of the current transformer U_r 1,2 kV
Rating test voltage of insulation (50 Hz, 1 min U_p) 6 kV
Rating frequency 50 Hz
Rating thermal current $1,2 \times I_{pn}$
Short-time withstand thermal current I_{th} , 1 s $60 \times I_{pn}$
Rating peak current I_{dyn} $2,5 \times I_{th}$
Working temperature range -5...+40°C
Conformity with standards - PN-EN, EN, VDE, ANSI, BS, AS, CAN

Example of an order:

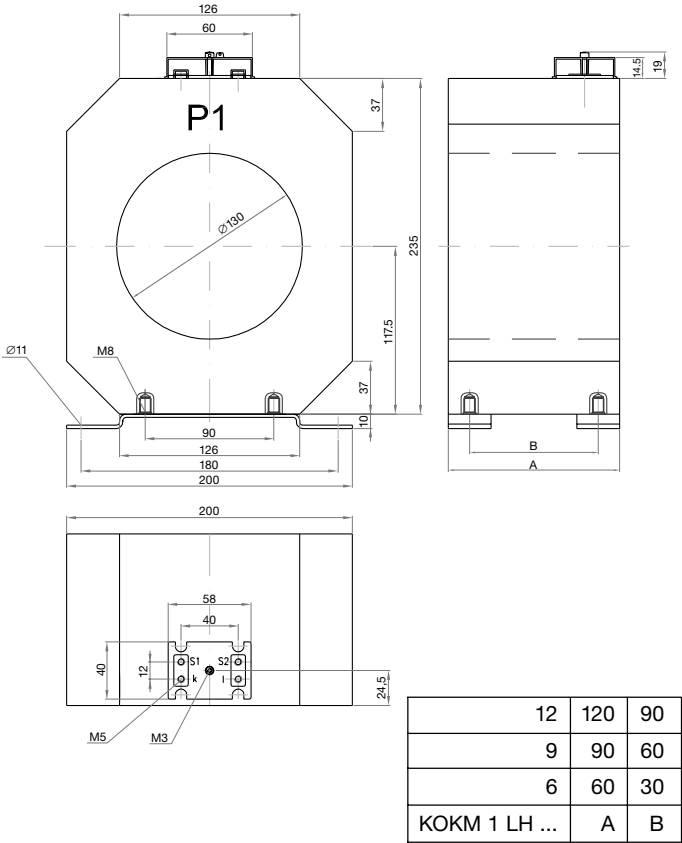
In the order shall be specified: type, ratio, I_{th} , load, class and number of pieces, for example:
KOKM 1 LH 12 150/1 A/A, $I_{th} = 60 \times I_{pn}$, 1 VA 10P10 - 3 pieces

Table for selecting current transformers KOKM 06 LH

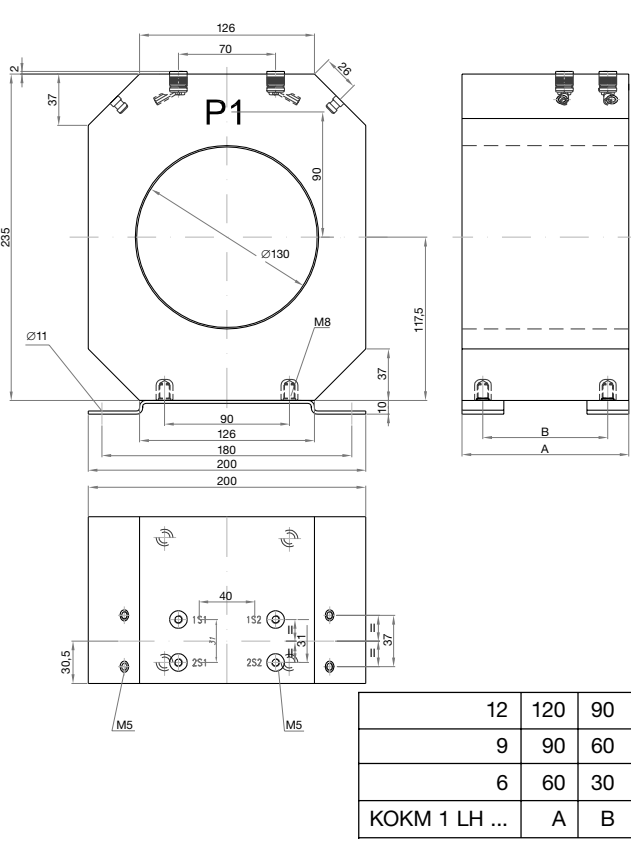
Primary Current I_{pn} [A]	Maximum permissible load [VA]											
	Secondary current $I_{sn} = 1$ [A]						Secondary current $I_{sn} = 5$ [A]					
	Measurement class FS		Protection class Fa				Measurement class FS		Protection class Fa			
	0,5	1	10P10	10P20	5P10	5P20	0,5	1	10P10	10P20	5P10	5P20
50	–	–	2	1	0,5	0,5	–	–	1,5	1	0,5	0,5
60	–	–	2	1	0,5	0,5	–	–	2	1	1	0,5
70	–	–	2,5	1	1,5	1	–	–	2,5	1	1,5	1
75	–	–	2,5	1	1,5	1	–	–	2,5	1,5	2	1
100	–	1,5	3,5	1,5	3,5	1,5	–	1,5	3	1,5	3	1,5
110	–	3	4	1,5	4	1,5	–	2,5	3,5	1,5	3,5	1,5
120	–	3,5	4	1,5	4	1,5	–	3,5	3,5	1,5	3,5	1,5
140	–	6	5	1,5	5	2	–	7,5	4,5	2	4,5	2
150	–	8,5	5,5	2	5,5	2	–	8,5	5	2	5	2
200	4	20	7,5	2	7,5	3	2,5	11	7	2,5	7	2,5
240	9	30	8,5	3,5	8,5	3,5	9	29	8,5	3	8,5	3
250	10	32	9	3,5	9	3,5	10	33	9	3,5	9	3,5
300	17	50	11	4	11	4	19	50	10	4,5	10	4,5
350	29	60	12	4,5	12	4,5	29	60	12	5,5	12	5,5
400	60	90	12	3	12	3	39	60	14	6	14	6
500	60	90	15	4	15	4	50	90	18	8	18	8
600	60	90	18	5,5	18	5,5	60	90	21	8,5	21	8,5
630	60	90	19	5,5	19	5,5	60	90	21	8,5	21	8,5
800	90	90	20	5,5	20	5,5	90	90	26	9	26	9
1000	90	90	26	7	26	7	90	90	27	5,5	27	5,5
1200	90	90	31	8,5	31	8,5	90	90	30	6	30	6
1250	90	90	31	8	31	8	90	90	32	6,5	32	6,5

At special request can be delivered also current transformers with values of secondary current different these given in the table above (e.g. 2 a or 4,3A) and current transformers for frequency 60 Hz.

KOKM 1 LH version 01



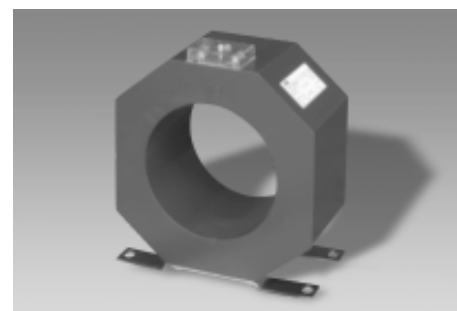
KOKM 1 LH version 02



KOKM 1 NJ – is the indoor, cable, low voltage current transformer in resin insulation. Transformers of KOKM type are suitable for measurement of phase currents in low voltage switchgears. As the primary conductor is used the non-insulated busbar or the low voltage cable. Current transformers of KOKM series can be also used for measurement of the phase current at voltages even higher than 1,2 kV, if the insulation of the high voltage primary conductor fulfils the requirements of relevant standards relating to the working voltage.

Technical data:

Type KOKM 1 NJ
Maximum number of windings 1
Level of insulation 0,6/3/-
Highest permissible voltage of the current transformer U_r 1,2 kV
Rating test voltage of insulation (50 Hz, 1 min U_p) 6 kV
Rating frequency 50 Hz
Rating thermal current $1,2 \times I_{pn}$
Short-time withstand thermal current I_{th} , 1s $60 \times I_{pn}$
Rating peak current I_{dyn} $2,5 \times I_{th}$
Working temperature range -5...+40°C
Conformity with standards - PN-EN, EN, VDE, ANSI, BS, AS, CAN



KOKM 1 NJ 8 ver. 1

Example of an order:

In the order shall be specified: type, ratio, I_{th} , load, class and number of pieces, for example:

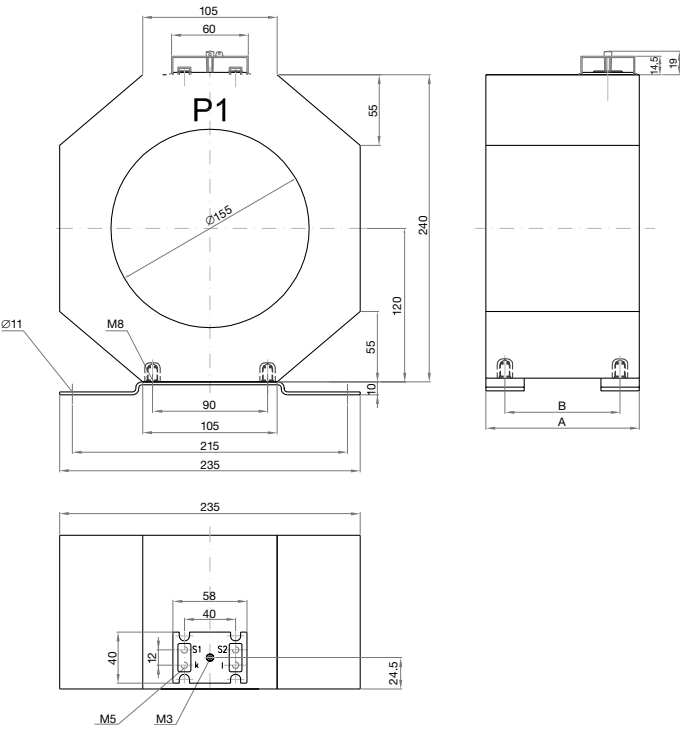
KOKM 1 NJ 12 150/1 A/A, $I_{th} = 60 \times I_{pn}$, 1 VA 10P10 - 3 pieces

Table for selecting current transformers KOKM 1 NJ

Primary Current I_{pn} [A]	Maximum permissible load [VA]											
	Secondary current $I_{sn} = 1$ [A]						Secondary current $I_{sn} = 5$ [A]					
	Measurement class FS		Protection class Fa				Measurement class FS		Protection class Fa			
	0,5	1	10P10	10P20	5P10	5P20	0,5	1	10P10	10P20	5P10	5P20
50	–	–	2	1	0,5	0,5	–	–	2	0,5	0,5	0,5
60	–	–	2,5	1	0,5	1	–	–	2,5	1,5	0,5	0,5
70	–	–	3	1,5	1,5	1,5	–	–	3	1,5	1	1
75	–	–	3,5	1,5	2	1,5	–	–	3	1,5	1,5	1
100	–	0,5	4,5	2	4	2	–	0,5	4	1,5	4	1,5
110	–	2	5	2,5	4,5	2,5	–	1,5	4,5	2	4,5	2
120	–	3,5	5,5	2,5	5,5	2,5	–	3	5	2	5	2
140	–	5	6,5	3	6,5	3	–	4,5	6	2,5	6	2,5
150	–	6,5	7	3	7	3	–	5	6,5	3	6,5	3
200	1,5	8	8	3,5	8	3,5	1	9	9	4	9	4
240	4,5	13,5	9,5	4,5	9,5	4,5	4,5	14	10	5	10	5
250	5	15	10	4,5	10	4,5	5	15	11	5	11	5
300	9	23	12	5,5	12	5,5	11	26	13	6	13	6
350	18	35	14	6,5	14	6,5	18	32	15	7	15	7
400	29	50	16	7,5	16	7,5	20	40	18	8	18	8
500	35	80	20	9	20	9	30	60	20	10	20	10
600	50	90	24	11	24	11	45	90	25	12	25	12
630	50	90	25	11	25	11	50	90	26	12	26	12
800	60	90	31	14	31	14	90	90	30	13	30	13
1000	90	90	38	16	38	16	90	90	38	14	38	14
1200	90	90	42	18	42	18	60	90	40	13	40	13
1250	90	90	45	18	45	19	60	90	40	12	40	12

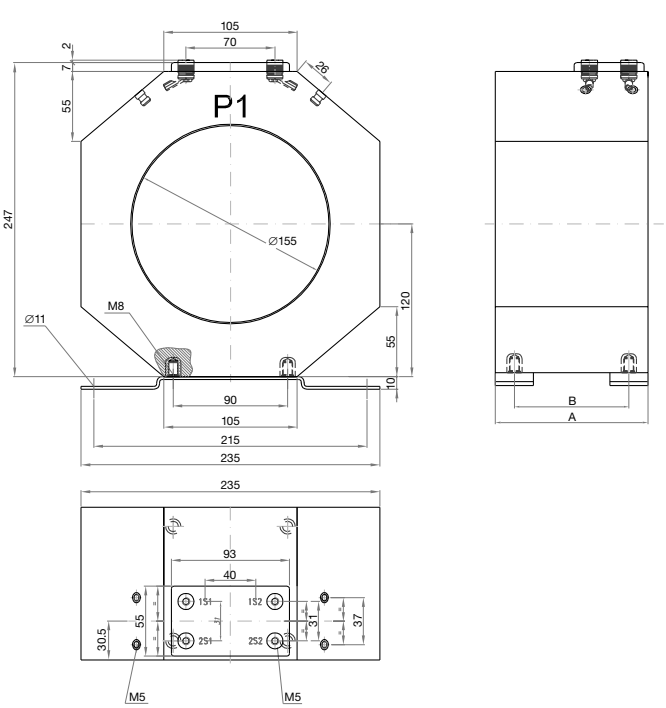
At special request can be delivered also current transformers with values of secondary current different these given in the table above (e.g. 2 A or 4,3A) and current transformers for frequency 60 Hz.

KOKM 1 NJ version 01



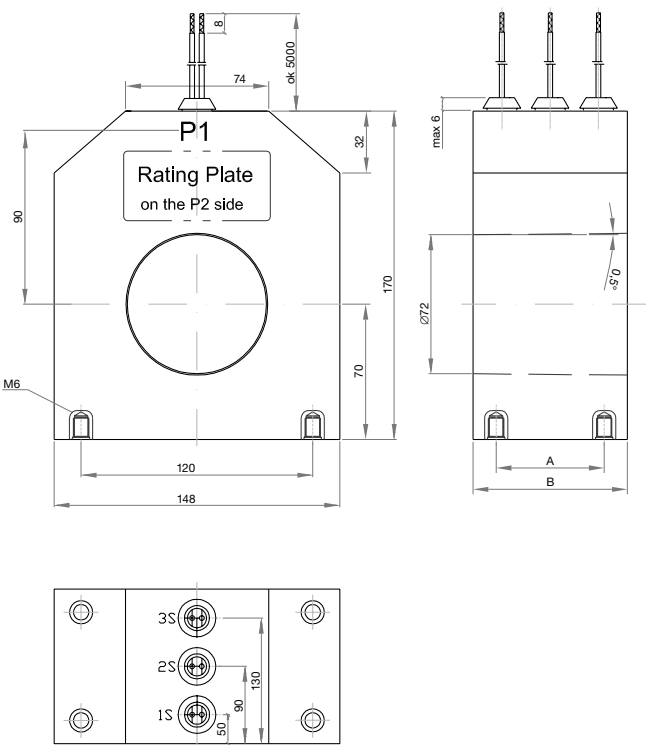
12	120	90
9	90	60
6	60	30
KOKM 1 NJ ...	A	B

KOKM 1 NJ version 02

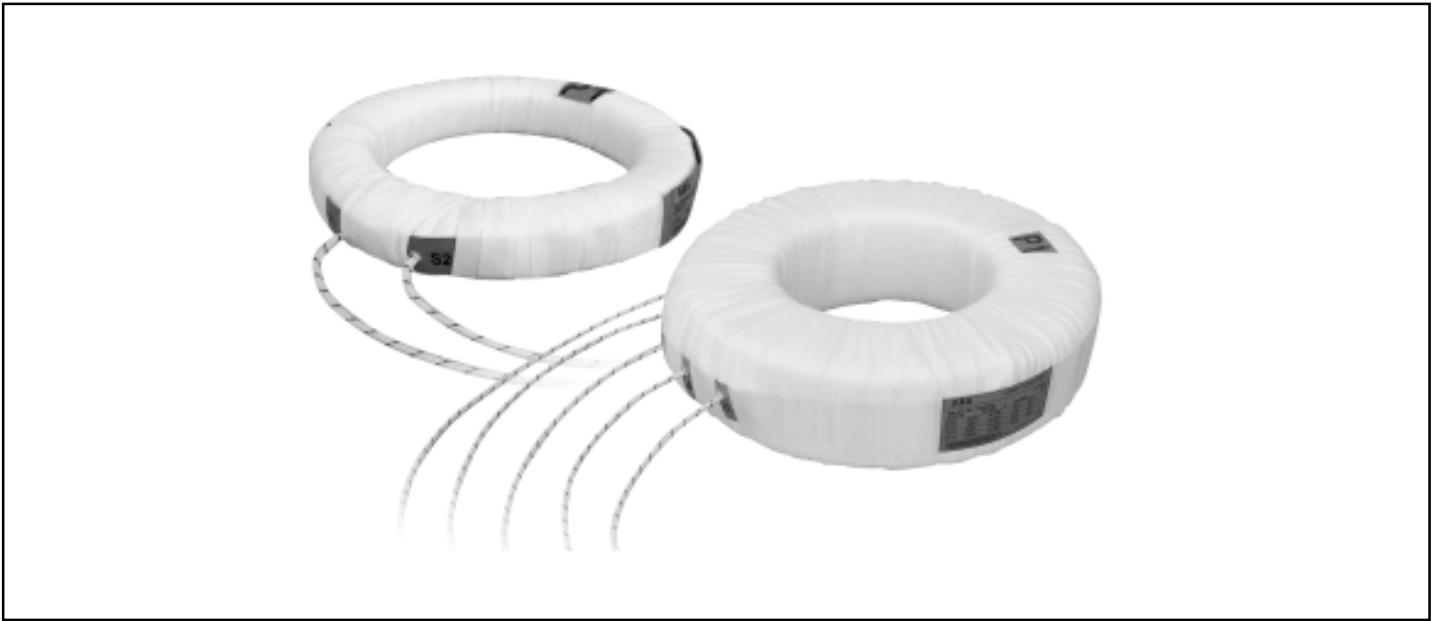


12	120	90	123
9	90	60	93
6	60	30	63
KOKM 1 NJ ...	A	B	C

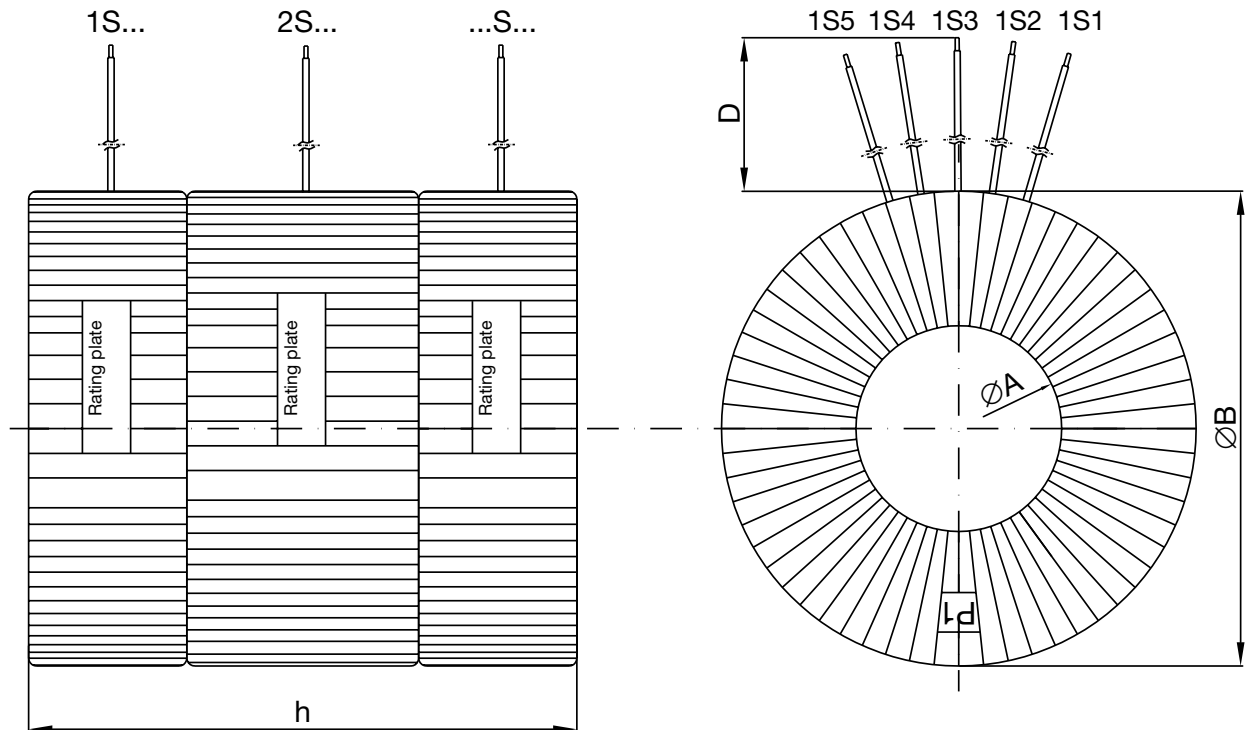
KOKM 1 ED



Current Transformers type KOLT For Oil-immersed Transformers



Dimensional drawing





KOLT 072 115 x 235 x 60

Technical data

Primary current range I_{pn} [A]	100A to 2 500A
Rated secondary current I_{sn} [A]	1A or 5A
Insulation level	0.72 / 3 / -
Range of rated output S_n [VA]	1VA to 90VA
Number of windings	1 to 4
Conformity with Standards IEC, PN-EN, SEV, VDE, ANSI, BS, CAN, CSA, GOST	
Accuracy class acc. to IEC	0.2s; 0.5s; 0.2; 0.5; 1; 3; 5; 5P; 10P; PX
FS	5; 10
ALF	5; 10; 15; 20; 25; 30
Rated frequency f [Hz]	50, 60
Short-time withstand thermal current, 1s I_{th} [A]	$100I_{pn}$ max. 100kA
Peak withstand current I_{dyn} [A]	$2,5I_{th}$ max. 250kA
Insulation class acc. to IEC	B
Min. inside diameter f A [mm]	min. 30 mm depending on parameters
Max. outside diameter f B [mm]	max. 900 mm depending on parameters
Height h [mm]	max. 900 mm depending on parameters
Length of leads D [mm]	1m, other length at the client's request

Transformers with other dimensions and parameters are available at the client's request.

1. Versions available

- single phase
- with one or several windings
- with one or several tapings
- insulation – cotton tape + impregnating varnish
- without housing
- without primary winding

2. Application

The current transformers type KOLT are suitable for mounting inside power transformers and are suitable for operating immersed in oil, under conditions of moderate and tropical climate. These current transformers are designed for supplying measurement and protection circuits of power systems operating under rated frequency of 50 Hz.

3. Marking

Each current transformer is fitted with rating plate in accordance with IEC 60044-1 Standard. Values of rated voltage and rated power frequency test voltage of insulation – stated on the rating plate – relate to the insulation of secondary windings. Primary and secondary terminals are directly marked on the current transformer.

4. Description

Current transformers type KOLT have neither housing nor primary winding. Under operating conditions the primary winding is the power transformer's bushing insulator, which is at the same time the main insulation of the current transformer. The secondary windings are evenly wound on the circumference of the toroidal core.

Secondary winding insulation is made of polyester tape (torlen).

Current transformers with the weight of approx. 100kg or more consist of several parts – to facilitate both transport and installation. Each separate part contains the following information: a serial number which coincides with the one stated on the rating plate as well as markings of primary and secondary winding terminals.

5. Transport

While transported current transformers must be protected against humidity and heavy shocks. Current transformers with the weight exceeding 50kg and current transformers especially sensitive to shocks are transported on wooden pallets.



KOLT 072 230x260x45

6. Installation

During installation of current transformers observe the following instructions:

- Secondary winding marked 1S1- 1S2 should be placed on the top;
- Pay special attention to keep the same polarization for all parts of the current transformer (P1 – P2 – P1 – P2 markings);
- Avoid shocks.

7. Compliance with Standards

Current transformers meet the requirements of the following standards:
IEC 60044-1

At the client's request we manufacture current transformers meeting the requirements of SEV, VDE, ANSI, BS, CAN, CSA, GOST Standards

8. Ordering

The order must contain the following:

- name and type of current transformer
- rated primary current / rated secondary current I_{pn}/I_{sn} [A]
- short-time thermal current, 1 s I_{th} [kA]
- rated output power and accuracy class of each winding S_n [VA]
- limit transformer dimensions (min. inside diameter, max. outside diameter, max. height)
- length of leads
- standard
- quantities.

9. Order example

Current transformer type KOLT

1200/5/1/1 A

$I_{th} = 72$ kA

I. 15VA , class 0.5 FS10

II. 60VA , class 5P15

III. 60VA , class 5P20

min. inside diameter $A = \varnothing 150$ mm

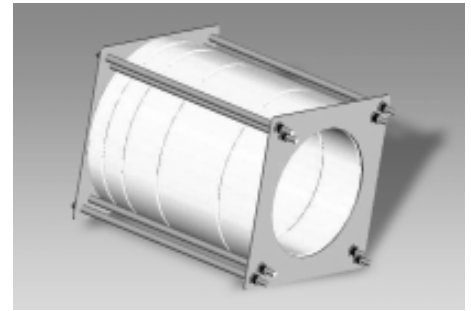
max. outside diameter $B = \varnothing 300$ mm

max. height $h = 200$ mm

length of leads 1,5 m

Standard IEC 60044-1

quantity – 9 pcs.



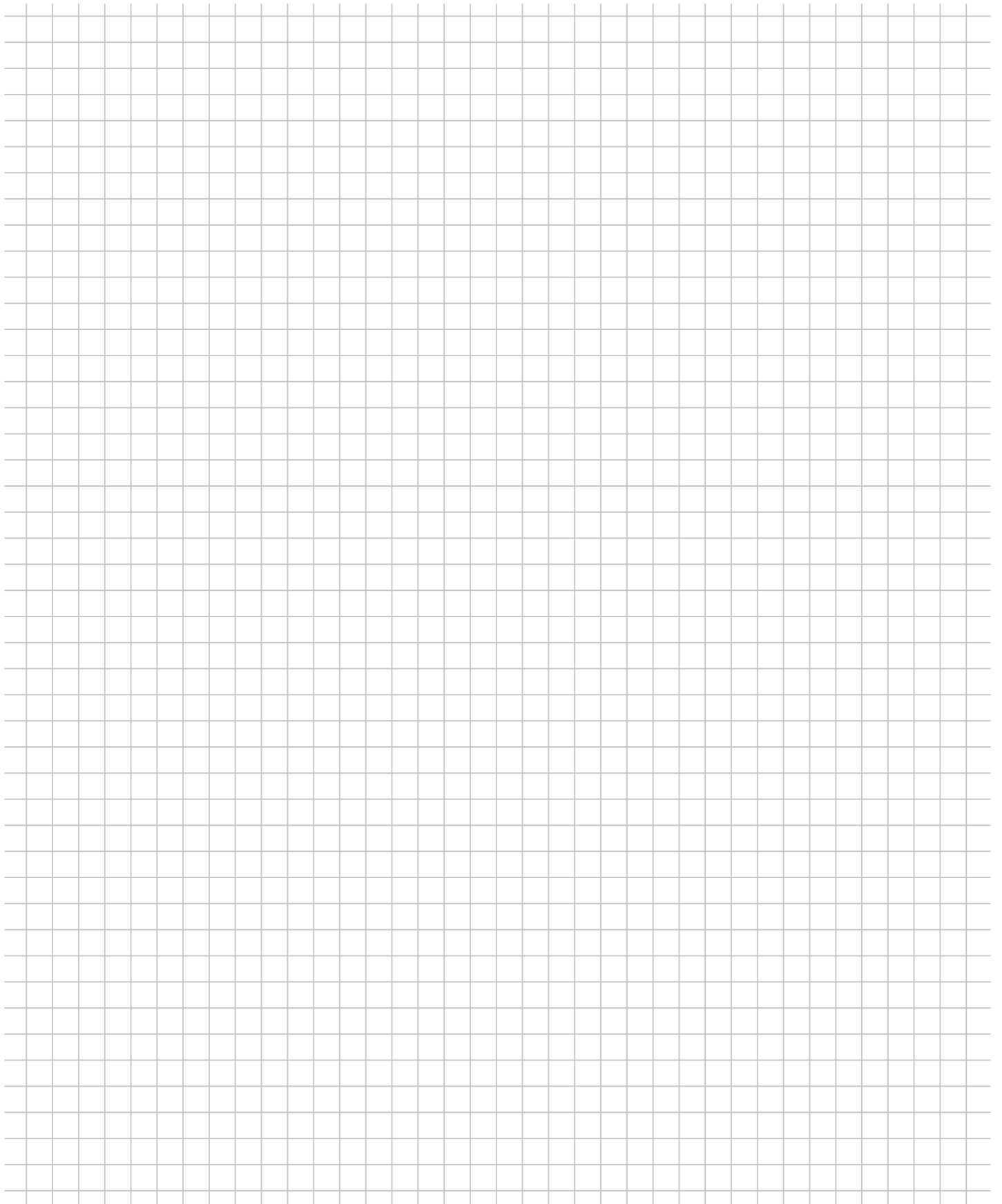




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